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ADDRESSES.

THE AMERICAN ACADEMY OF MEDICINE;

ITS OBJECTS; ITS SIGNS OF PROMISE AND ITS OBSTACLES; ITS FIELD OF WORK; AND SOME SUGGESTIONS LOOKING TO AN INCREASE OF ITS EFFICIENCY.

Address of the President delivered at the Annual Meeting in Chicago, Ills., Nov. 13, 1889.

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Fellows of the American Academy of Medicine:—By one of those strange freaks that make the action of otherwise clear headed people unaccountable, you last year elected me to the office of your chief servant. As I was unavoidably absent from the session during which this action was taken, I did not learn of it until many hours after you had adjourned. Hence, nothing was left me other than to endeavor to understand and execute your wishes. Respecting the outcome of my service you are all in position to judge. The new plans of operation, proposed by Dr. Gerrish last year and adopted by the Academy, called for the appointment of several new committees, whose reports speak for the wisdom of the changes and the faithful service of these committees. In general it seems to me that the changes, and the individuals, who at much personal sacrifice have rendered them so successful, deserve the full approval of the Academy.

For the first time in its history the Academy holds a meeting in the West. For the first time, it comes into personal contact with the mighty material forces clustering about the great lakes, the vast rivers of the American Continent, the boundless prairies, and the pure breezes that starting far up in the heavens by the tops of the Rockies, sweep for thousands of miles over fertile plains. For the first time, it gazes upon the marvellous civilization that has sprung, like Aladdin's lamp, in the vast garden that is bounded by the great lakes, the Gulf of Mexico, the Alleghanies and the Rocky Mountains. Within this area, is being developed a civilization having the largest and most favorable conditions for gigantic growth, untainted by the disturbing influences of Europe or Asia, as the obstruction of vast mountain chains separate it from ready access to the great ferries which ply the Atlantic and Pacific. Here, if anywhere, will appear the typical American. Here, if anywhere, will be seen the greatest differentiation from all other peoples and races on the earth, and the most perfect blending of all types under the influence of the governing Anglo-Saxon direction. Here, if anywhere, will be seen the product of the richest soil, the most varied climate, the most perfect air, the purest water, the grandest forests, and the most majestic rivers. Here men and women do and dare all things in their efforts to bring under subjection, the countless natural riches everywhere found in such profusion. Into this atmosphere, most typically represented in this its largest city, the American Academy of Medicine for the first time comes. That it will grasp some idea of the medical needs of this superb region, and be able to initiate such schemes as will result in their early supply, is assured. That the Fellows will better appreciate the problems before them, see additional grounds for encouragement, and appreciate more definitely the obstacles to be met and overcome, is our hope. Within this vast area is a teeming population, the parent of millions who within a short time will occupy these fat places. The medical profession throughout it are in a plastic state of development. Now, better, than ever after it can receive and execute lessons of its matchless opportunities, and the measures requisite for their best improvement.

Some have said that the American Academy of Medicine is founded upon a new idea, a "fad" born of an aristocratic modern notion. As a fact, we find that Hippocrates standing at the dawn of historic medicine, urged earnestly that "the preliminary training of medical men be made as broad and as deep as possible." Farther, by precept and example the same idea has been maintained by all the famous medical men from Hippocrates to Alonzo Clark, as was abundantly shown in the eloquent and scholarly address of Dr. George Jackson Fisher, last year. We, the lineal descendants of the worthies, are simply endeavoring to maintain the faith once delivered to the "fathers," thousands of years ago. Our

mission is to galvanize into life, the truth of the importance and value of a preliminary education, that has become obscured by the overshadowing influence of commercialism. We strive to aid in the establishment of such conditions as will ensure the possession by every medical man of such general knowledge of literature, science, art and trade in their broadest as well as narrowest relations, so that he may rank as a real teacher, companion and friend of the cultured and the uncultured. We rejoice that the medical profession contains large numbers of such men, but the Academy would have them universal, the rule not the exception. The change which the attainment of this end *would make*, is illustrated by the change which occured in the classes of the Harvard Medical School during the interval from 1870 to 1880. On the former date it will be remembered that this school raised its standard of preliminary requirement, and proportionately its general curriculum. In brief it began to teach modern medicine in a rational manner. President Elliot in describing this change says: Until 1870 the students in the medical class of Harvard were noticeably inferior in bearing, in manners, and in discipline to the students in other departments; now they are indistinguishable from other students." He adds, "a corresponding change in the medical profession at large would be effected in twenty years if all the medical schools of the country would institute a reasonable examination for admission. Under the present order of things, the American Physician and Surgeon may be, and often is, a coarse uncultivated person, devoid of intellectual interests outside of his own calling, and quite unable to speak or write his mother tongue with clearness and accuracy." To set into operation agencies which will enable all medical students to rank with any other professional students in gentlemanly bearing, and supplant the coarse ill bred, ignorant physician by one who can comprehend the intellectual forces operating in the community about him, and who can meet on equal terms any individual who has become possessed with the intellectual training of his time, such is the mission of the Academy.

Then, if ever such a time comes, will the degree of doctor of medicine be an introduction and passport to any and every class in any community. Then, medical men will take rank among the leaders in all things pertaining to the best interests of the communities in which they live. Until then the physician's diploma avails for naught except as a license to practice medicine, in some States. Its general worthlessness becomes more and more apparent as State after State refuses to accept it because of the lack of uniformity of the knowledge which its possessor may have acquired. Until a change is brought about such as the Academy seeks, each doctor must introduce himself, pass his individual examination before the guardian Board of the State in which he desires to live, and before the cultured people in the community among whom he casts his lot. Having passed these examinations successfully, he occupies a place in the community such as his personal merit has won just as does the blacksmith or farmer. The London *Lancet* stated the case as follows: "If medicine is to acquire and sustain a high respect for its membership, such as is given men of science, art and other professional callings, its membership must be equipped with all the richer learning which is required to hold its own in a world that is daily becoming more cultured, and will certainly demand more of its medical advisers. Its members must have large physical and mental energy, capacity for long continued efforts, an unselfish devotion to their work, and a high moral life. The practitioner of the future must know more than his father knew, and know it in a different manner. Here and there one may leap over all obstacles, and in spite of unfortunate antecedents mount to the front rank. But the vast majority of the medical profession can reach that rank only by the most thorough and systematic cultivation of every physical, mental and moral faculty before they enter upon the study of medicine. Then if ever the physician must make the acquaintance of the great world of literature, philosophy, art, poetry, language, etc., which has been growing out of the labors of countless hosts who have lived, and by their toils made it possible for us to accomplish more than they in the short span of human life. At such time or never the student must master the objects and forces, beneath the earth's surface, upon the earth's surface, and above the earth's surface. By microscope and telescope, and all other scopes, by retort and test tube, by heat, light, electricity, chemical force and gravitation, he must follow the great teachers into the revealed mysteries of nature. Only thus can he come to know something of himself, and of the human beings whose ills he would learn to prevent, remove or alleviate. Only by such training can he hope for a manly development, which will rank him with the best educated men of the world." To increase the number of those who shall thus stand as the representatives of medical science and art, is the crowning glory of the Academy's labors.

But the objection is made such development will not pay; it costs too much time, too much money, for the return in fees. To this I reply that the history of medical men shows clearly:

1. Those, who enter upon the study and practice of medicine for the fees they hope to receive, have made a fatal mistake. They had better, at once, devote their time and energies to some calling in which it was possible to accumulate large

fortunes. The pure tradesmen has no place in the temple of medicine more than he has in the temple of religion. He may don the horse's skin to cover his own, but the donkey's ears will stick out and betray him. He may be sure that at some time the Master will enter and drive from the Temple "the money changers and those who sell doves."

2. The highest honors, the largest fees, the most enduring renown, the greatest glory, have, during all historic time come to such physicians as have, first and last, sought the uplifting of the profession to which they belonged. In the language of the Great teacher "those who have sought the Kingdom of God, have also had added to them all other earthly things." In brief it is certain that medical men developed and equipped as we have desired, would reap the very highest fees, the most distinguished honors that earth can give. We trust that this Academy may in the near future make plain to the world that its principles once fully enforced by the profession, would be attended by a vast increase of the solid cash.

It is fitting, from time to time, to look over the field in which we labor and note the progress made in its cultivation, and the signs of promise for the future. Of these I note a few for our encouragement. In truth it must be said, that the Academy is but one of numerous agencies, all striving toward the accomplishment of the same end, by diverse routes. All of these we cordially welcome, and wisely seek to increase in efficiency and to multiply.

1. It will be remembered that last year the College of Physicians and Surgeons of New York, placed in active operation a preliminary examination of considerable severity. The result shows that its classes maintained a size entirely unexpected, though gratifying to the friends of an increased preliminary education. In some other medical colleges the increase of preliminary requirement was attended by equally satisfactory rssults.

2. Better than this because of larger scope and indicative of a wider interest in preliminary education, is the action of the last New York State Legislature in enacting the following:

"Before the regents of the State of New York, or the trustees of any medical school or college within this State, shall confer the degree of doctor of medicine upon any person who has not received the baccalaureate degree in course from a college or university duly authorized to confer the same, they shall require him to file with the secretary or recording officer of their university or college, a certificate showing that prior to entering upon the study of medicine, he passed an examination conducted under the authority, and in accordance with the rules of the regents of the University of the State of New York, in arithmetic, grammar, geography, orthography, American History, English Composition, and the Elements of Natural Philosophy, and such certificate shall be signed by the secretary of the regents and countersigned by the Principal or Commissioner conducting the examination."

This enactment shows that the principle for which the Academy contends has been adopted by the State of New York. The examination is low, and the enactment imperfect in some details, but as a whole it is a great step in advance. We can rely upon the spirit which prompted, and the intelligence which formulated *the enactment* to eliminate imperfections, and advance the requirements as public sentiment shall desire.

3. It is meet that the Academy should take heart, because the enemies of the Illinois State Board of Health failed to accomplish its ruin this year. Its position, that no diploma will be recognized as entitling its possessor to practice medicine in Illinois unless given by a medical college which requires a definite preliminary examination, still remains the law of this State, and is enforced. The service of this board in teaching the doctrine of the absolute necessity of some preliminary requirement of medical students before entering upon college training, has been of incalculable value. It is doubtful whether any moral suasion would have been so effective, with the medical colleges, the medical profession, and the laity and other State Boards of medical examiners. As the pioneer of teaching this doctrine by law it will ever retain the gratitude of such as are able to appreciate its difficulties. Profiting by its success and failure, other boards have been established upon a higher plane, but all cheerfully acknowledge their debt of gratitude to this board.

4. The results exhibited by the Minnesota State Board of Medical Examiners, under the last phase of its development, are especially encouraging. Under the old Act, Minnesota licensed in 1885 one hundred and forty-six physicians. During the following two years the State rapidly increased in population, and yet under the last Act only one hundred and forty per year were licensed during the two following years. At the examination held October, 1889, of seventeen applicants only twelve were licensed. From this statement we are prepared to hear that Minnesota has but one physician to thirteen hundred people, while in the rest of the States it is affirmed that one physician exists to every five or six hundred people.

The last Act, in brief, requires all persons, desiring to begin the practice of medicine in Minnesota, to pass a scientifically practical examination by a Board independent of all medical schools. No candidate is admitted to examination unless he presents a diploma from a medical school that requires a preliminary examination upon the fol-

lowing branches: English grammar, composition, geography, algebra, physics and natural sciences, together with one of the following languages: Latin, French or German. In addition, the college must require attendance upon at least three full courses of instruction of not less than six months duration, before conferring the degree of doctor of medicine. The practical result of this law has been to restrict the number of new men who have entered upon the practice of medicine in Minnesota, and very greatly elevate the general and special training of the new members. It has also given a stimulus to medical colleges in their efforts to advance the standard of preliminary requirement. It must be that in the near future the profession of Minnesota will possess a higher grade of general culture and professional acquirement than in the past, or than is possessed by other States. As this accords with the aims of the Academy, it can rejoice in such tangible proof of progress.

5. In Montana, Virginia, North Carolina, etc., there are also laws bearing upon the increase of the preliminary requirements of medical students. While these are less radical than the Minnesota Acts, they contain the seed which is sure to grow until they have equalled if not surpassed the foremost.

6. At the late meeting of the American Medical Association Dr. Millard, so long actively engaged in the reformatory work in Minnesota, presented a scheme urging the adoption of such measures as would result in the adoption, by each State, of the Minnesota Acts. His idea was regarded with favor by those present. That difficulties attend its speedy realization does not render it less appropriate that we should accept it as an indication of the development of our cherished principles. We are ready to grant that law cannot accomplish all the reform we seek, still we must admit that law can do much in numerous directions otherwise unattainable. It can lay its heavy hand upon the wilful transgressor, and make him respect the forms of propriety. The discussion of such laws incident to their formulation in each State, to their passage through the legislatures and to their enforcement, compel attention from millions of the laity, and thousands of the profession, who otherwise would not give the matter a moment's thought. Medical colleges would thus learn that they cannot with impunity, for trade, prostitute the profession to which they belong. The law can make it profitable for the colleges to adequately increase their preliminary and other requirements.

7. The pharmacists, at their last annual meeting, bewailed the low condition of the general culture of their craft, and endeavored to formulate some plan by which such culture could be increased. They sought to have the professional side of their calling occupy a more prominent share of attention. The preliminary requirement suggested as fitting for those who desired to enter upon the study of pharmacy compares favorably with that of most medical colleges, which enforce any preliminary examination. Thus in many directions the spirit of reform is abroad. While it works slowly, it is surely coming to the front.

(*To be concluded.*)

ORIGINAL ARTICLES.

THE POSSIBLE DANGER OF INJURY TO THE MIDDLE EAR CAVITY BY THE USE OF NASAL ATOMIZATION, ILLUSTRATED BY THREE CASES.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

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In calling attention to the few facts which I am about to lay before you, I am aware of my trespassing upon what might be called sacred territory and, therefore, do not come before you with ill-advised and hastily drawn conclusions. I know I shall meet with considerable skepticism, for such is usually the lot of those who lay bare possible injurious effects of previously considered harmless therapeutic agents, especially after they have become the cherished idol of the whole profession. I can but think that the skeptics will be vastly in the minority when I have summed up the result of my labor. I shall first give you several illustrative cases, followed by several experiments and conclusions. The object of this paper is to call your attention to the possible danger of injury to the middle ear as a result of nasal atomization, especially if such pressure is direct, as in the Davidson and Snowden atomizing tubes. Two of these cases developed in my own practice during the last year. Latterly I have been more guarded in the use of sprays and the amount of pressure used, and, on this account, have not had the misfortune to meet with any further mishaps.

Case 1.—That of a woman 27 years of age; married. Came to me during the month of December on account of a post-nasal catarrh attended with the secretion of an excessive amount of mucus. On the 10th of January I admitted her to my consultation room, immediately after dismissing a patient having an atrophic rhinitis, on whom I had been using a spray of high pressure to remove the adherent mucus from the nasal cavities. I began the treatment on this day, as usual, by the spraying of the nasal passages with a modified Dobell's solution. I forgot the high pressure, and as I began to spray the left nasal

cavity she involuntarily drew back, made an attempt at respiration, immediately followed by an explosive cough. I quickly cut off the spray. Quickly recovering her power of speech she remarked that she experienced a sensation as though the sprayed fluid had entered directly into her left ear. I assured her that it was impossible for any of the fluid to have entered the ear, and after pursuing the treatment in a more cautious manner dismissed her. About 11 o'clock of the same evening I was somewhat surprised at receiving a summons to call at her house at once. I was informed that her ear had given considerable annoyance since leaving my office. Her pain was great and radiated over side of head and along course of Eustachian tube; remitted almost entirely during next day, and on the third disappeared. Effusion rapidly set in and was attended with considerable deafness, roaring in the ears and resonance of voice. The appearance of membranes I did not note, but remember them as being those of a typical case of otitis media acuta.

Case 2.—This case occurred in a gentleman, single, 45 years of age. This patient consulted me during the winter on account of a great hoarseness from which he had suffered since contracting a cold several weeks before. On examining his larynx I found a marked paralysis of the thyro-arytenoidei interni and considerable congestion of the vocal cords. On investigating further I discovered quite a severe pharyngitis and naso-pharyngitis, while in the right nasal cavity there existed a spur, cartilaginous, completely blocking that cavity. His voice was restored and the pharyngeal trouble improved as much as could be expected with the nasal deformity still existing. In March he returned and requested that I should remove the septal spur. I operated on the 2d of March, using cautery knife, with the happiest result—perfect and all sufficient nasal respiration through the right cavity. Everything progressed favorably until the 14th; the septal wound had almost completely healed, and nowhere was there evidence of any inflammatory trouble. On this day I used a little greater pressure in air compressor, in order to remove the small crusts that had formed around the edges of the septal wound. While using the spray the patient remarked, "Why, doctor, that certainly entered my ear." Being quite positive that my patient had not erred in judgment I abstained from further treatment. Before dismissing him I made a post-nasal examination and found this cavity in quite a normal condition—no evidences of any acute inflammatory trouble. I expected trouble, and was not disappointed. On the morning of the 15th the patient called at my office, his facial expression giving unmistakable evidence of a night spent in great suffering. He stated that at about 12 o'clock of the previous evening he was awakened by a severe pain in his right ear, which increased so in its intensity as to be almost unbearable. He described the pain as of a throbbing character, being intensified by clearing of the throat, coughing and deglutition. Tenderness was manifested by pressure in the angle between mastoid and ramus of lower jaw, but there was complete absence of spontaneous pain over the mastoid region, nor could any be elicited by pressure. No objective noises. Examination of hearing: Tuning fork showed that bone conduction was better upon affected side. Pölitzer's Hörmesser, R. $\frac{4}{4}$, L. $\frac{4}{4}$. Inspection of auditory canal: R. E. canal filled with a mass of cerumen; L. E. showed same condition as on right side, but not so great. Cerumen was readily removed by very gentle syringing, a very mild degree of force and the use of only a small amount of water being sufficient to float out the masses. After removal of cerumen the hearing distance was as follows: R. E. $\frac{4}{4}$, L. E. $\frac{4}{4}$. The membrane of the right ear now being subjected to examination presented the following evidences of a marked inflammation: The central portion of the membrane, that corresponding to the position of the manubrium, presented the condition of intense injection. The processus brevis and the manubrium were completely obscured by an intense swelling and injection of the membrane, which had the appearance of an inverted cone, the apex corresponding to the umbo, and the base to the area of the foramen of Rivini. The anterior, inferior and posterior segments were almost free from any inflammatory evidence. Without further remark one will readily see that our patient had a well developed and intense inflammation of the middle ear cavity. He responded poorly to treatment, but eventually, after considerable suffering, made a perfect recovery.

Case 3.—Dr. L., consulted me on the 19th of February of this year on account of a severe pain in the right ear. He was constantly annoyed by more or less obstruction to free nasal respiration. On the previous evening the nasal obstruction had given him considerable inconvenience, and in order to relieve the uncomfortable sensation he resorted to the use of an astringent spray. The spraying fluid consisted of a 5-grain solution of tannic acid. A few hours after this treatment he developed a severe pain in his right ear. On examination I found well-marked evidences of an acute inflammation of the middle ear cavity, which rapidly responded to treatment.

In this connection, and as directly bearing upon this subject, I will here offer three or four cases reported by Dr. Ring in the *N. Y. Medical Record* of August 11, 1888. These cases appeared under the title, "Four Cases of Acute Inflammation of the Middle Ear from the Use of Roosa's Bulb Nasal Inhaler." Dr. H. P. Allen, of Columbus, ably criticised the deductions made by Ring, and showed that he had erred in supposing

the otitis media to be due to the inoffensive bulbs of Roosa. As I wish to show the relationship these cases have to the subject in hand I will give a short synopsis of the treatment adopted previous to the invasion of the otitis media. In Dr. Ring's first case he used a spray of Dobell's, iron and glycerine to the posterior wall of the pharynx, and afterwards inflated, using Pölitzer's bag with Roosa's attachment. In case 2 he sprayed nasal cavities and inflated, as before. In case 3 he sprayed nose, pharynx and throat with Dobell's, and then inflated as in cases 1 and 2. In all three of these cases we have the use of the spray, followed by the inflation of the middle ear by Pölitzer's method. We here report six cases of acute inflammation of the middle ear seemingly due to the use of the nasal spray. It remains for us not only to subject them to careful analysis, but also to ascertain, by direct experimentation, whether a spray under usual pressure is capable of entering the middle ear. It will be necessary, first, to consider the reflex muscular movement excited in the naso-pharynx by the impact of spray; and the minimum of pressure necessary to develop in order to inflate the middle ear cavity.

During the act of spraying, the fluid, more or less irritating, impinges against the posterior wall of the pharynx and, as a result of this irritation, excites the following muscular movement, viz: Very frequently the soft palate contracts immediately; again it remains immobile for a few seconds, or shows only a slight degree of contractility, until there is a tendency of the fluid, which has undergone condensation, to flow into the oral portion of the pharynx, when the palati muscles cause a rapid and vigorous contraction of the soft palate, making a complete separation of the nasal from the oral pharynx. It is hardly necessary to mention that the palati muscles not only exert their action upon the soft palate, but also cause a shortening and dilatation of the mouth of the Eustachian tube. These two factors, the separation of the nasal from the oral portion of the pharynx, and the shortening and dilatation of the tube, are essential elements to the entrance of air or fluid through the Eustachian tube into the middle ear cavity. In inflation of the middle ear by Pölitzer's method these two factors are essential when occurring in conjunction with and simultaneous to the compression of an elastic air bag, the nozzle of which is inserted in one nostril while the other is closed, in order to prevent the outward escape of air.

The maximum of pressure one is capable of producing with a Pölitzer air-bag of a capacity of 300 grams is one-half of an atmosphere, equivalent to a pressure of one-half kilogram. Pölitzer states that with a pressure of 0.1 of an atmosphere air is capable of entering the middle air cavity.[1] We have now the minimum of pressure one is capable of evolving from a Pölitzer air-bag, and the minimum of pressure by which air can be forced into the middle ear cavity. The amount of pressure one ordinarily uses in order to produce a spray varies from 10 to 25 pounds, according to the exigencies of the case; a spray of 25 pounds I would consider one of high pressure and very rarely to be used. It is to be distinctly understood that I am here referring to the danger attending the use of the direct pressure spray. It would be difficult to prove that there was sufficient pressure remaining, after loss by resistance and in escapage from opposite nostril, to equal the minimum of pressure necessary to cause the entrance of air into the middle ear cavity; yet I hope, by the following simple experiment, to prove that such a pressure exists, if not with unobstructed, at least with partly obstructed nasal passage during the maximum of the spraying act.

In order to obtain the momentum of a sprayed fluid as it passed from the mouth of the atomizing tube it was necessary to construct the following simple device: I first selected an ordinary 8-ounce wide-mouth bottle, into which I placed 3 pounds of mercury. This bottle was stoppered with a vulcanized rubber cork, through which I caused two holes to be bored. Through the larger of the openings I passed a barometer tube, its lower extremity coming almost in contact with the floor of the bottle. Through the other opening I passed a hard rubber tube, bent at right angles; this penetrated 2 centimetres within the calibre of the bottle. Applying cork to mouth of bottle, tubes in position, the apparatus was ready for use.

In order to ascertain if there was any loss in momentum in the spray, due to resistance in the conducting medium, and also where this loss occurred, I instituted the following two sets of experiments:

In the first set of experiments I connected the conducting rubber tube of the air compressor directly to the hard rubber tube of my device. After the above connection had been made I introduced a pressure of 1 atmosphere (1 kl.) in my air compressor. It was now my intention to learn whether the existence of 1 atmosphere of pressure in the air compressor was capable of creating sufficient momentum—the momentum producing sufficient pressure—to raise a column of mercury 76 cm. On turning on the stop-cock, all connections having been made, the mercury rapidly rose in the tube to the height of 76 cm., where it remained stationary, showing that there was sufficient momentum to overcome the atmospheric pressure; or, in other words, the pressure at mouth of tube was as great as in air compressor, there being no appreciable loss in momentum.

In my second series of experiments I interposed between the hard rubber tube and the rubber tub-

[1] "Ohrenheilkunde," Vol. I, p. 1817.

ing of the air compressor an ordinary Snowden atomizing tube, all other conditions remaining the same. In this experiment the mercury rapidly ascended the barometer to the height of 54 cm. We observe here a considerable loss of momentum, due to the resistance created in the atomizing tube. The loss is equivalent to nearly one-third of an atmosphere. Calculating from this the amount of momentum existing with the use of a pressure of 12½ pounds in the air compressor, the pressure ordinarily used, we find that it is sufficient to raise a column of mercury 44 cm. in height, nearly equivalent to two-thirds of an atmosphere—a pressure greater than one is capable of generating from a Pölitzer air-bag. Other conditions being present, we have here produced more than sufficient pressure to cause an inflation of the middle ear cavity. The other conditions are the separation of the oral from the nasal pharynx, the shortening and dilatation of the Eustachian tube, and sufficient obstruction in the opposite nostril to interfere with the egress of sprayed fluid. It would be impossible to prove by dynamics, even with all these conditions existing, that sufficient pressure was generated within the naso-pharynx to cause the penetration of a sprayed fluid within the middle ear. It is hardly to be conceived that there would be any greater loss of pressure, by resistance in the nasal passages, than takes place in the atomizing tube, leaving us, approximately, a pressure of more than one-third of an atmosphere, more than sufficient, according to Pölitzer, to cause an inflation of the middle ear cavity. I submitted my experiment to Dr. E. T. Fristoe, professor of chemistry and natural philosophy in the Columbian University, and he concurred in my conclusions. Although dynamics cannot be of any further assistance, we can gain from the following experimental cases positive testimony in this connection. At this time, as my dynamical experiments lacked a certain amount of positiveness, not enough to quell the doubtings of the skeptic, and while looking about for further means of demonstrating these facts, the happy idea occurred to me of making use of living material.

One does not care to toy with his private patients, but the exigencies of the case were such, and a possibility of harm so remote, that I concluded to make such use of them. This idea seized upon me more forcibly as I saw my way clear, in treating these cases, to resort to a little collateral and at the same time harmless observation of the effects that would be produced by special modes of procedure. The cases that I utilized were two of otitis media suppurativa chronica, attended with complete destruction of the membrana tympani, and in which it was necessary to use the spray in treating a co-existing rhinitis. These patients had patulous Eustachian tubes. It was only necessary to slightly vary my usual course of treatment in order to carry out the experiment I had in view. Previously I had never sprayed the nasal cavity after inflating. It was now my intention, after inflating and thoroughly drying out the middle ear cavity—a cavity minus the outer wall—to again spray the nasal passages and note if there then existed any moisture. On following out this line of investigation in both of my cases I found not only moisture, but the actual existence of several drops of the sprayed fluid in the anterior inferior portion of the tympanic cavity. Again, I introduced a sufficient quantity of powdered boracic acid after drying out both cavities, to fill out the existing remnant of tympanum. I now used the spray in the nasal cavity, and, on examining the ear, found that the boracic acid had become moist throughout.

These two illustrative cases, one with and one without artificial obstruction of the nasal cavity, in conjunction with the actual physical demonstration of the amount of pressure generated by a spray, show in a most conclusive manner that a sprayed fluid is capable, under certain conditions, of penetrating the middle ear cavity through the medium of the Eustachian tube.

Even admitting, though, that there is not sufficient pressure produced to cause the entrance of air into the middle ear, no one will deny the entrance of the sprayed fluid into the mouth of, and a certain distance within, the dilated cartilaginous portion of the Eustachian tube. Immediately after the spraying of the nasal cavities, and before the sprayed fluid has had sufficient time to undergo condensation, the patient resorts to the clearing of the nostrils, more or less violently. The clearing of the nasal passages is always, unless there is a constriction or obstruction of the Eustachian tube, however produced, attended with inflation of the middle ear cavity. This inflation is sufficient, I claim, to drive any spray or fluid, which may have lodged within the lower portion of the tube, into the middle ear cavity. While the condition just mentioned is capable of producing an acute otitis media—the fact of its not being more frequently produced not militating against this occurrence—yet I do not admit that this was the manner in which it occurred in the cases above illustrated, but simply refer to this in order to call attention to a further danger to be thought of in connection with promiscuous and continued spraying of the nasal and naso-pharyngeal cavities. To me there is no doubt that the sprayed fluid entered, directly through the tube, the middle ear cavity in the cases under consideration, and that the irritation produced by the fluid was the cause of the subsequent otitis media.

On many occasions I have had patients state that they had experienced a sensation, during the spraying, in the ear, which caused them to suppose that the fluid had entered the middle ear

cavity, without producing any deleterious effect; and I do not doubt but that other laryngologists can recall similar experiences. Subjecting the first case to analysis, we cannot see what other cause than that of the spraying can be assigned as the producing agent. The pharynx and the naso-pharynx were devoid of all evidences of an acute inflammation, and remained so throughout the history of the case. There was no treatment excepting the spraying of the throat, and we have the positive statement of the patient that she experienced a sensation as though something had entered the middle ear. In the second case we have a recent operation,—twelve days since—the wound being in a healthy condition, nearly healed, showing no evidences of inflammation, considerably removed and not in the line of continuity. No treatment was resorted to after the patient indicated the possibility of the entrance of the sprayed fluid into the ear. The third case is so simple as not to require analysis. The occasional occurrence of inflammatory changes in the middle ear in connection with operations upon the septum narium has given rise to the thought that possibly, in most of these cases in which otitis media acuta or suppurativa occur as a sequelæ, they might owe their origin to the spraying subsequently resorted to, rather than to the operation. There seems to me no plausible reason why an operation from 2½ to 5 cm. anterior to and on the opposite wall of the nasal cavity from the orifice of the tube should give rise to an inflammation extending into the middle ear cavity.

We call attention to these facts not with the intention of decrying the use of the spray—I can not conceive how we can replace this valuable cleansing and curative agent—but simply to call attention to certain dangers which may attend injudicious use of high pressure or indiscriminate employment of this agent. The douche produces, as all know and as first called attention to by by Roosa[2], otitis media suppurativa; but its usefulness is undoubted, and there are cases in which its application becomes an absolute necessity. St. John Roosa's calling attention to this fact has not driven the douche into oblivion—it has only caused a suspension of its indiscriminate use and limitation to its proper sphere of usefulness. Many other valued agents and methods are at times attended with disastrous results; calling attention to these effects only makes one more cautious in their employment. Such is my sole intention in connection with this paper.

Before closing my paper I wish to call attention to another condition which the continued and indiscriminate use of the spray may not only aid in the production of, but possibly in certain cases be the direct producing agent, *i. e.*, otitis media hypertrophia. To me it would be very interesting to follow a number of cases in which the spray had had liberal use, in order to ascertain whether there was any subsequent impairment of hearing. I shall follow this line of investigation where possible, and hope, by calling attention to it, that others may be stimulated in the same direction. The manner in which the spray could aid in the production of this condition we can readily see—it does not rest upon an empty hypothesis. The difficulty would rest in separating this cause, should it be so, from others acting simultaneously.

[2] Archives of Ophthalmology and Otology, Vol. I, No. 1.

DR. MACKENZIE said he believed that fluid may enter the ear in any method of cleansing the nose, and that the danger does not pertain especially to the spray. He narrated a case of double otitis media resulting from the use of intra-nasal spray. His remarks did not apply to the nasal douche.

DR. WRIGHT indorsed Dr. Mackenzie's remarks with the exception that auto-douching *often* gives rise to otitis media, but spraying rarely, and that he has never seen trouble resulting from the use of the post-nasal douche in the hands of the physician, while it should *never* be given to a patient to use himself.

DR. H. H. CURTIS said that in cases of middle ear complication following the use of the nasal douche he had observed that the trouble was usually brought about by allowing the fluid to enter through a free nostril and flow out through one contracted by a stenosis.

DR. MACKENZIE said that all who had much experience in the treatment of nasal disease had met with accidents such as that described by Dr. Richardson. There is no method by means of which fluids are introduced into the nares by which the liquid may not enter the middle ear. The accidents from sprays were, however, of not sufficient frequency to warrant extraordinary care in the method. He related illustrative cases.

DR. C. W. RICHARDSON: I called attention to these few facts as much for the information of the members present as for the purpose of calling to your consideration a few points which I was obliged to omit from my paper on account of limited time. I wish to refer to the indiscriminate manner in which hand ball sprays are so frequently placed in the hands of the laity, and the possible danger resulting from this evil practice.

FAITH-CURING OF CONTAGIOUS DISEASES SUPPRESSED.—The Board of Health of Matteawan, N. Y., having encountered a case of diphtheria that was being neglected by some faith-curing practitioners, declared an immediate quarantine, which was maintained by the police. A reputable physician was put in charge of the case, and the child began to improve.

STAMINA.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. N. BELL, A.M., M.D.,
OF BROOKLYN, N. Y.

The object of this essay is to reduce the signification of the words "susceptibility," "predisposition" and "heredity."

In the progress of bacteriological knowledge, there is too little attention paid to the organic conditions of health, and the resisting power of the system in conflict with antagonistic forces. Thirty years ago, while engaged in the study of "Living Things," the writer had occasion to observe: "Man's life is inseparably linked with the plants and animals which coexist with him, and these are the issue of long anticipations and preparations, where all the changes produced in other objects occur according to a relation existing among the substances changed. Latitude, elevation, nature of the soil, degree of cultivation, relative position in regard to mountains, forests, rivers, etc., and general aspect of the neighborhood, all modify the condition of man, and prove his adaptability by such effects as serve to make him understand his relations to what is around him. We cannot prevent the dews of heaven, nor the heat of the sun, nor the progress of decomposition; but we can understand the course and order of natural phenomena, we can trace out the laws that govern them and ascertain our relations to them.[1]"

The reward of man's cosmopolitan nature and free agency is the progress of human welfare, even though won at the cost of impaired health and premature death by those who do the most to promote it. But the influence is reciprocal. Man reacts upon nature no less than nature upon him. Indeed, the changes effected in natural phenomena by human agency are the striking characteristics of conditions promotive of, or in conflict with human health everywhere. This reciprocal action should, above all things else, make the progressive man alive to the importance of constructing and sustaining his ability to contend against the antagonistic forces—both natural and artificial—with which his sphere of life is everywhere intimately associated. And in the application of this knowledge he will learn that health is something more than mere freedom from disease. Health is *opposed* to disease and its causes by the relative integrity, strength and vigor of all the organs and functions of the body, fortified by such conditions as the human organism depends upon for its fabrication and resistance. For example: Two individuals, the one endeavoring to live by rule, and having much to say about the "laws of health," afraid to run upstairs because it makes the heart beat more rapidly, hurries the respiration and fills the lungs; can't eat cheese because it constipates the bowels, nor cherries for the contrary reason; never drinks water, or but very little, with meals; can't take a glass of milk at bedtime, or a hot roll for breakfast, because such food always sets heavy on the stomach; never eats bacon or pork, and eschews fat meat of all kinds; takes an hour at meals and always leaves off hungry; would not take a cold bath for anything; who prefers the weight of a thick furlined overcoat or cloak to a light one and a brisk walk on a cold day; and sundry other postulates promotive of tenderness. And the other—the reverse: Who is neither afraid to hurry at his meals or to his business; not only runs up stairs, but a long hill, or if in a hurry, forty rods or more after a railroad car; who has taught his stomach, as he has his arms, legs, heart and lungs such lessons in gymnastics as not to be too dainty, and to profit by the variation; who satisfies hunger and thirst; when among Romans, live as they do; finds hog, hominy and hot bread digestible, wholesome and nutritious; has, in short, never tried to live by any rule, except temperance in all things and protection against the extremes of weather Both of such persons may be equally free from disease, but is it necessary to add that the power of the latter to resist it in every respect—whether it be inhaled, swallowed, inherited, or by exposure to inclement weather—is greatly in favor of the well-nourished and the strong? And the relative immunity depends not upon predisposition, but upon stamina.

With regard to certain infectious diseases to which children are especially liable, in part, doubtless, because of their greater functional activity, but chiefly because their power of resistance has not yet become sufficiently fortified—for it is well known that adults generally who have not encountered those diseases in childhood rarely contract them subsequently—the same relative immunity exists; the strong and vigorous child is much less likely to contract them than the feeble; and the convalescent, those who are particularly feeble from any one of such diseases, are well known to be the most of all liable to attack and to succumb from another. And of pulmonary consumption, the most prevalent and the most fatal of all diseases, who does not know that enfeeblement invites it? That individuals are less and less liable to it—whether traceable to hereditary taint or otherwise—in proportion as coddling has been avoided, appetite for wholesome fat food cultivated, cold bathing habitual, protective but loose clothing worn, and exercise in the open air unrestrained? By the maintenance of these conditions all the processes of healthy organization are promoted and the constitution fortified against tubercle bacilli as in

[1] "Knowledge of Living Things with the Laws of their Existence," by A. N. Bell, A.M., M.D. Bailliere Brothers, New York, 1860.

like manner against other disease germs, no matter whence the quarter or at whatever age of the individual exposed; and no less against diseases not attributable to germs. And the more if we accept Metschnikoff's theory of the office of the *leucocytes* or white blood corpuscles, for these in both number and strength depend upon proper nourishment. "In health," says Kirkes, "the proportion of white to red corpuscles, which, taking an average is about 1 to 500 or 600, varies considerably, even in the course of the same day. The variations appear to depend chiefly on the amount and probably also on the kind of food taken, the number of leucocytes being very considerably increased by a meal, and diminished again on fasting. Also in young persons, during pregnancy, and after great loss of blood, there is a larger proportion of colorless blood corpuscles, which probably shows that they are more rapidly formed under these circumstances. In old age, on the other hand, their proportion is diminished.[2]"

No good observer will fail to recognize the coincidence of the condition which diminishes the proportion of leucocytes and the increased liability to disease—that of fasting; or note the no less remarkable coincidence, the diminution in the number of the leucocytes and increasing infirmity of old age. The leucocyte or colorless blood corpuscle is an *amœba*, the simplest type of a living thing; a jelly-like mass of protoplasm, of the same consistence throughout, which possesses the property of moving about and capturing its prey by changing its form by the protrusion of first one part of its body and then another, and of extemporizing a stomach by wrapping itself around any nutritive particle with which it comes in contact and digesting it. On account of this peculiar property and apparent function of the leucocytes Metschnikoff has conferred upon them the name of *phagocytes*—eaters—as expressive of their most distinctive feature, and of the process in general, *phagocytosis*.

"It has long been known," says Dr. William Osler,[3] "that foreign bodies such as ligatures, portions of dead bone and other substances, may be completely removed by leucocytes.

"Nowhere in the body do we have such a facility for studying the action of phagocytes as in the organs of respiration, in which, with the cilia of the bronchial mucosa, they share in the work of cleansing the air-passages; and of these two important agencies it is hard to say which plays the more important part in the expulsion of those particles of foreign matter which, in cities at least, we constantly inhale. There are several groups of cells engaged in this work: The ordinary mucus corpuscles; the alveolar epithelium; the connective tissue-elements of the pulmonary stroma, and the leucocytes of the lymph tissue in the bronchial, tracheal, mediastinal glands.

"The examination of the morning sputa of a cigarette smoker, or of a person who has been exposed to a dusty atmosphere, shows very clearly that no small proportion of the carbon grains is included within protoplasm. The free granules are abundant, but almost every leucocyte has its little load which it has picked up on its road from the finer tubes to the trachea.

"It is possible to conceive, under certain conditions, of the air cells gradually filling, were it not for the activity of phagocytes, derived largely from the alveolar epithelium, which stands, as it were, at the gateway of the lymphatic circulation.

"In dwellers in the country, as well as in wild animals, breathing an air comparatively pure, the cilia and the phagocytes in the air-passages appear quite able to prevent access of the carbon grains to the lung tissue; whereas in the dwellers in the cities, and in animals kept in confinement, the impurities in the air are so abundant that these agents are insufficient, and sooner or later the grains penetrate the air cells.

"The steps in this process described may be followed in the lungs of any town dweller, but to see in perfection the remarkable activity of the pulmonary phagocytes, one must study the early stages of anthracosis, particularly in those exceptional cases which we see occasionally when a miner has been killed by accident or dies of acute disease. It is not, I think, too much to say that the larger part of the pigment contained in lungs, almost, if not quite, black, is enclosed in protoplasmic cells.

"A physiological process in which phagocytes play a leading rôle, is the removal and disintegration of the red blood corpuscles which have lived their life and are no longer fit for work. The cells containing the red blood-corpuscles, which are found in the bone marrow and in the spleen, however much opinion may differ as to their mode of origin, cannot, I think, be regarded in any other light than as phagocytic elements with this definite function.

"In the mature body we have seen that in the lungs, in the intestines, and in the blood-making organs, the phagocytes have most essential functions; but the question of chief interest to-day relates, not so much to this normal process about which there has never been much doubt, as to the supposed part which these cells take in protecting the body against the invasion of parasites.

"Metschnikoff has studied a number of diseases, erysipelas, anthrax, relapsing fever, and tuberculosis, with a view of finding facts in support of this theory, and his communications within the past four years have been numerous and elaborate.[4]

[2] Kirke's Hand Book of Physiology, vol. 1, page 79.

[3] Address before the Alumni Association of Bellevue Hospital, New York, April 3, 1889.

[4] Published chiefly in Virchow's Archiv.

"In erysipelas the cocci are attacked first by the leucocytes filling the lymph spaces, which rapidly proliferate and actively eat the micro-organisms. Not alone do the colorless corpuscles act as phagocytes, but the fixed connective tissue cells assist in an important manner. In cases of recovery he found that behind the advancing cocci the leucocytes were crowded with parasites, which showed evidences of digestion and destruction. The connective tissue cells do not appear to attack the cocci, but are chiefly concerned with the absorption of the inflammatory exudate, even taking up the leucocytes which have died. In fatal cases there was enormous development of micrococci, the majority of which lay free in the tissues not enclosed in the phagocytes.

"As we might suppose, the views of Metschnikoff have met with sharp criticism in many quarters, and from no one more ably and at greater length than from Baumgarten.[1] While not denying that the leucocytes eat the bacteria, he claims that the process is by no means universal, and is carried on so unequally, that we can scarcely speak of an active warfare waged against the parasites.

"Metschnikoff states that in malaria the parasites are attacked chiefly in the spleen and the liver by the larger phagocytes existing in these organs, and to a much less extent by the leucocytes in the circulating blood.

"We see then, in malaria very little evidence in the blood favoring a theory of phagocytosis; certainly no such campaigning on the part of the leucocytes as might be expected from the presence, in such numbers, of foes so destructive to the red corpuscles."

Dr. Osler concludes that: "While phagocytosis is a wide-spread and important physiological process throughout the animal kingdom, and while it undoubtedly plays a most important part in many pathological conditions, the question of an active destructive warfare waged by the body cells against the microörganisms of disease must still be considered an open one." (*Medical News.*)

Whatever may be the final verdict with regard to the antagonism of the phagocytes to disease germs generally, it appears to be clear that their proportion and their energy are in direct relation with the vigor of the organism, and dependent upon the same sustaining conditions.

Sir Wm. R. Grove, F.R.S., the distinguished author of "Antagonism," (the subject of a lecture delivered at the Royal Institution of Great Britain, April 20, 1888,) after alluding to Prof. Metschnikoff's theory, says:

"Let us now consider the external life of animals. I will take as an instance, for a reason which you will soon see, the life of a wild rabbit. It is throughout its life, except when asleep (of which more presently), using exertion, cropping grass, at war with vegetables, etc. If it gets a luxurious pasture it dies of repletion. If it gets too little it dies of inanition. To keep itself healthy it must exert itself for its food; this, and perhaps the avoiding its enemies, gives it exercise and care, brings all its organs into use, and thus it acquires its most perfect form of life. I have witnessed this effect myself, and that is the reason why I choose the rabbit as an example. An estate in Somersetshire, which I once took temporarily, was on the slope of the Mendip Hills. The rabbits on one part of it, viz., that on the hillside, were in perfect condition, not too fat nor too thin, sleek, active and vigorous, and yielding to their antagonists, myself and family, excellent food. Those in the valley, where the pasturage was rich and luxuriant, were all diseased, most of them unfit for human food, and many lying dead on the fields. They had not to struggle for life, their short life was miserable, and their death early; they wanted the sweet uses of adversity—that is, of antagonism.

"The same story may be told of other animals. Carnivora, beasts or birds of prey, live on weaker animals; weaker animals herd together to resist, or, by better chance of warning, to escape beasts of prey; while they, the herbivora, in their turn are destroying vegetable organisms.

"I now come to the most delicate part of my subject, viz., man (I include women of course). Is man exempt from this continual struggle?

"It is needless to say that war is antagonism. Is not peace so also, though in a different form? It is a commonplace remark to say that the idle man is worn out by ennui, *i. e.*, by internal antagonism. Kingsley's "Do-as-you-like" race—who were fed by a substance dropping from trees, who did no work, and who gradually degenerated until they became inferior to apes, and ultimately died out from having nothing to do, nothing to struggle with—is a caricature illustrative of the matter.

"As, with food or exercise, deficiency is as injurious in one as is excess in another direction, so, as affecting the mind of communities, as I have stated it to be with individuals, the effect of a life of ease and too much repose is as much to be avoided as a life of unremitting toil. The Pitcairn Islanders, who managed in some way to adapt their wants to their supply, and to avoid undue increase of population, are said never to have reached old age. In consequence of the uneventful, unexcited lives they led, they died of inaction, not from deficiency of food or shelter, but of excitement. They should have migrated to England! They died as hares do when their ears are stuffed with cotton, *i. e.*, from want of anxiety. We have hope in our suffering, and in the mid-gush of our pleasures something bitter surges up."

[1] Loc. cit.

"We look before and after,
And pine for what is not;
Our sincerest laughter
With some pain is fraught;
Our sweetest songs are those which tell of
Saddest thought."

(*Nature.*)

With reference to heredity especially (as too commonly understood), in the face of what has been brought forward, while it has undoubted significance with reference to certain constitutional diseases, it is, notwithstanding, amenable to the same organic forces as feebleness of constitution in general; dependent more upon parental feebleness and unhealthful regimen in early life than upon specific tendency. The offspring of poorly nourished, dyspeptic parents, for illustration, are scarcely less liable to pulmonary consumption than the offspring of those affected with that disease; and the offspring of drunkards and of those who use narcotics to excess are well known to be fully as liable to insanity, epilepsy and idiocy as they are to inebriety. Indeed, hereditary feebleness of constitution is the prevailing "predisposition" to disease, and this, associated as it frequently is with inadequate nourishment and neglectful regimen during childhood, accounts in a great degree for the excessive mortality which obtains in infancy.

But in advocating more attention to personal regimen as the chief means of cultivating constitutional stamina and thus increasing the power of resistance to disease, which it is the purpose of this paper to urge, there should be no diversion from the effort to destroy the foci of disease germs and to maintain healthful surroundings. It should always be borne in mind, however, that the ability of the practical sanitarian to successfully cope with infectious disease-germs and their foci, and to maintain his own immunity, is the same as that of other persons: in proportion to the power of resistance, based upon constitutional and cherished stamina.

WHEN SHOULD THE OBSTETRIC FORCEPS BE USED? AND WHAT FORM OF INSTRUMENT IS REQUIRED?

Read in the Section of Obstetrics and Gynecology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889.

BY WILLIAM S. STEWART, A.M., M.D.,

PROFESSOR OF OBSTETRICS AND CLINICAL GYNECOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE PHILADELPHIA, PA.

The question as to when the obstetric forceps should be used follows on the assumption that there are times when they are required. Taking for granted this necessity let us briefly refer to it, enumerating in the first place the circumstances and conditions which do *not* justify the application of the blades.

The forceps should never be used simply to gratify nervous patients, interfering nurses or meddlesome women, nor to save the time of a practitioner, busy or otherwise. The possibility and comparative ease of applying the blades within the partially dilated os is no indication that even the most careful use in such cases may not result in the rupturing of the cervix and other soft parts, exposing the patient to the immediate dangers from hæmorrhage, septicæmia and the various inflammatory conditions, and as well the possibility of life-long suffering.

The indications for the use of the obstetric forceps may be enumerated as follows:

1. Where speedy delivery is necessary in the interest of either mother or child; as in eclampsia, hæmorrhage, exhaustion, prolapse of the cord, etc. 2. Where the ordinary forces of labor are insufficient to overcome the obstacles to delivery; as in narrowing or partial obstruction of the birth-canal within certain limits, uterine inertia, large fœtal head, malpositions, and where the head is engaged in the pelvis and there has been no advance for some time, the "rebound" during the interval between the diminishing pains having ceased.

In addition it is of importance in all cases before applying the forceps to be assured of the existence of the following conditions: 1. That the membranes are ruptured. 2. That there is complete dilatation of the os and retraction of the cervix. 3. Knowledge of the position of the presenting part. 4. Emptiness of the bladder and bowel.

What form of Obstetric forceps should be employed?

The general answer is to use the form best adapted to, the case if possible. It must be admitted, however, that each practitioner has acquired by repeated experiences a certain degree of skill in the use of his choice of instrument, notwithstanding its imperfections. But it is not my purpose to refer to the list of instruments which have been more or less in use since the time of Chamberlen's invention, either by condemning one or extolling another, but rather to call your attention to some mathematical principles which should be taken into account in the construction of the obstetric forceps.

It is a trite, but no less true saying that "necessity is often the mother of invention"—with myself it has been the long felt necessity for certain unfulfilled requirements in the obstetric forceps in use that has led to investigations and experiments in this direction. My chief objection to the instruments in use has been the *crossing* of the handles, which, as we are all aware, necessitates the application of the right blade first in order that they may be locked. When the case is one of ordinary position of the head (first position, or left occipito-anterior) there is usually no difficulty in applying the blades in

the regular order; but it has been my experience, as it has no doubt many times been yours, that when the head is in the second position (right occipito-anterior) or is jammed into the right side of the pelvis, after applying without difficulty the first or right blade of the instrument the introduction of the other was not possible without great risk of injury to mother and child. In every case that I recall, after removing both blades and reversing the order of their introduction no difficulty was encountered till recrossing in order to lock was found impracticable without equally great risks of inflicting injury. An instrument made with the crossed handles reversed would undoubtedly be suitable in these cases, but for ordinary purposes it would not avail.

After much thought and study on this subject, not taking into account the blades, but handles to which any form of blade could be attached, and admitting of the application of either blade first, the instrument which it is my privilege and honor to present for your inspection and consideration is the result. The improvement, as has been said, is in the handles alone, and it is to this that your attention is called.

It was found necessary in constructing such an instrument, in order to avoid the difficulties arising from the crossing of the handles, to do away entirely with this form of handle, and return to the parallel handles improved by the addition of a second joint, and a hand piece so fitted that the necessary traction and compression can be made by a slight effort on the part of the operator.

The force employed is thus a conjoint one effected by means of a double lever, and is everywhere equal in amount to the resistance offered. The amount of traction necessary in the use of this instrument has been found by actual experience both on the manikin and the living subject to be very slight, and the compression just enough to keep the blades from slipping off the head, thus the amount of compression instead of being regulated by the grip of the operator as in the cross-handle instrument, is in every case controlled by the amount of resistance offered, so that in all ordinary cases there is little or no possibility of danger from this source. In certain cases, however, unusual force may be found necessary, and in order to avoid the risk of crushing the fœtal head by the increased compression resulting the toggle joint has been constructed so as to limit the compression to a degree corresponding to that of the average instrument.

As an additional safeguard in malpositions and irregular curvatures of the pelvis, the principle joint is not a fixed one, but allows of slight forward and backward movements of the blades in order that there may be a better adaptation to the head as well as the pelvis; provision has also been made so that when with other instruments locking would not be possible, these handles may be secured and traction attempted, there being at the same time a slight vertical freedom of the blades to admit of the adjustment to the head becoming more perfect. When the locking can be made absolute from the first this motion does not exist. The advantages then secured in the locking are effected by means of a coned hub with a winged nut attached at the principal joint on the right arm of the instrument.

In twenty-six cases,[1] all of which, undoubtedly, required instrumental delivery, I have used these forceps with results which were indeed surprises, both on account of the facility with which they were applied—either blade first, the slight amount of traction required in all of the cases, and the entire absence of any disfigurement to the children or evidences that in a single instance the compression had been too great.

It is my conviction, gentlemen, that when the obstetric forceps is required the use of this instrument will be attended with fewer risks to the mother, greater safety to the child, and much less difficulty and anxiety to the accoucheur.

RECENT RESEARCHES RELATING TO THE ETIOLOGY OF YELLOW FEVER.

Read at the Meeting of the American Public Health Association in Brooklyn, N. Y., October 23, 1889.

BY GEORGE M. STERNBERG,
MAJOR AND SURGEON U. S. A.

[Abstract for THE JOURNAL.]

The investigation in which I am engaged under instructions from the President of the United States, and in pursuance of authority of an Act of Congress approved March 3, 1887, "making appropriations for sundry civil expenses of the government," is not yet completed. The cultures which I have brought with me from Havana will require further study, and extended comparative researches will be necessary before a definite conclusion can be reached as to the specific etiological relation of one or the other of the microorganisms which I have obtained from yellow fever cadavers, principally from the intestines.

Owing to the facts mentioned and the limited time at my disposal, I can only give a brief gen-

[1] Since reading the above I have applied the forceps, in all, the thirty-fourth time up to date, with the same degree of satisfaction and success.

eral statement of the present status of the inquiry in which I am engaged and of the methods of research which have been employed. But in my final report a detailed account will be given of the various microörganisms encountered and of the numerous experiments made upon the lower animals.

Having remained in Havana from the middle of March until the first of September of the present year, I have had ample opportunity to obtain all the material necessary for a thorough research by modern culture methods. Thirty autopsies have been made in typical cases of yellow fever, most of which occurred among Spanish soldiers admitted to the military hospital in that city.

My cultures have been made for the most part in flesh-peptone gelatine, and in agar-agar jelly containing five per cent. of glycerine; numerous cultures have also been made in sterilized blood serum, in veal broth, and in *agua coco*. The last mentioned medium I used to some extent during my visit to Havana in 1879, as a member of the Yellow Fever Commission of the National Board of Health. During the past summer I have used it extensively, and find it to be an extremely valuable culture-medium, which is as transparent as water, and yet contains a large amount of nutritive material. It has a specific gravity of 1020 to 1025, a slightly acid reaction, and contains in solution a considerable amount of glucose. Both aerobic and anaerobic cultures have been made in the various media mentioned, into which have been introduced blood obtained from one of the cavities of the heart, material from the interior of the liver, the spleen, and the kidney, urine drawn through the walls of the bladder, and material from the stomach and intestines.

A method which has also been pursued in the entire series of cases consists in the preservation of a piece of liver or kidney, the size of a man's fist, in an antiseptic wrapping, by which the exterior is surely sterilized and the entrance of germs from without is guarded against. Such a piece kept in the laboratory for forty-eight hours as a rule preserved its fresh appearance and had no odor, but upon cutting into it it was found to contain numerous and various microörganisms. The cut surface had a decidedly acid reaction. The microörganisms found under these circumstances were bacilli of various species, and corresponding with those found in the contents of the intestine. They have been isolated by the use of Esmarch tubes and carefully studied. Possibly one or the other of them may be the veritable yellow fever germ, but up to the present time no satisfactory evidence has been obtained that such is the case. The bacilli which have been found most constantly by this method are:

A large, motionless, anaerobic bacillus, resembling in its morphology the bacillus of malignant œdema. This is very commonly present and is conspicuous by reason of its abundance and dimensions. In my list of microörganisms encountered it is designated by the letter "N."

The *bacterium coli commune* of Escherich, very common.

A motile, non-liquefying bacillus, resembling *bacterium coli commune* in its morphology, but more pathogenic for rabbits and guinea pigs, a facultative anaerobic, very commonly present—my bacillus x.

A short motionless bacillus with stained ends, in chains, resembling the bacillus of Babes, a facultative anaerobic, not pathogenic for rabbits or guinea pigs; found in a limited number of cases only—my bacillus o.

The presence of these various microörganisms in liver obtained at an autopsy made soon after death, and preserved in an antiseptic wrapping, may be taken as evidence that they were present in small numbers at the moment of death, but the examination of "smear-preparations" made immediately after death, and culture experiments made at the same time, show that they are not numerous, and in a considerable proportion of the cases the result of such immediate examination of the fresh liver tissue has been negative.

It is an interesting fact that material from a piece of liver kept as described, and containing the microörganisms referred to, is very pathogenic for guinea pigs when injected subcutaneously in small quantities, 2 to 5 minims, whereas the fresh liver tissue may be injected in considerable amount without producing any noticeable effect. This pathogenic power is due to the microörganisms present, and especially to my bacillus "N" and my bacillus "x." Details of experiments will be given in my final report.

Material from the intestine, also, which contains the same microörganisms is very pathogenic for guinea pigs.

At the close of my address I shall exhibit upon the screen photo-micrographs of the bacilli referred to, and also of the various microörganisms which have been claimed to be the specific germs of yellow fever, viz.:

The micrococcus of Dr. Domingos Freire, of Brazil; his so-called *cryptococcus xanthogenicus*.

The *tetragenus febris flavæ* of Dr. Carlos Finlay, of Havana.

The liquefying bacillus of Dr. Paul Gibier—my bacillus "g."

I may say with reference to the micrococcus of Freire that I have not encountered it in any of my cultures from the blood and tissues of yellow fever cadavers, and that my extended observations fail to give the slightest support to his claim.

The yellow fever germ of my friend Dr. Carlos Finlay, of Havana, which I have named *micrococcus tetragenus versitilis*, is one of the most common atmospheric organisms in the city of Ha-

vana. I have frequently obtained it in cultures made from the surface of bodies of patients in the hospitals in that city, and also in Vera Cruz, but it is not present, unless by rare exception, in the blood and tissues of yellow fever patients.

The liquefying bacillus which Dr. Paul Gibier isolated from the intestine in a limited number of cases, I have also obtained from the same source in about one-third of my autopsies, but it is not constant, and when present is not abundant. I see no good reason for supposing that it is the specific infectious agent in the disease under consideration.

THE CLINIC.

ON BLOOD DISEASES.

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[Reported for THE JOURNAL.]

SIMPLE ANÆMIA.

Case 1.—This girl, gentlemen, says that she is 18 years of age; that four years ago, when she was 14 years old, she began to feel sick. When asked in what way she was sick she replied that she felt tired and weak, and her legs were swollen. She also felt sick at the stomach, and threw up sometimes. Her neighbors told her that she looked white. She improved and was better for two months, and then worse again; then she improved again, and has been going on in this way, from better to worse, and from worse to better, ever since. She says that at present she has no headache and is not sick at the stomach. At one time she spat up some blood. Her feet are but little swollen at present. When asked whether she feels any pain, she places her hand over the left side.

The urine has a specific gravity of 1.015; it contains no albumen; it contains phosphates. The blood has been examined; the hæmoglobin is 20 per cent., the blood cells number 1,714,000 to the cubic millimetre. There is a systolic murmur, heard loudest at the second left intercostal space.

We have, then, a case apparently of simple anæmia, but one differing somewhat from the ordinary examples of this disease; differing from them principally in its long continuance and in the severity of the symptoms. Yet, after all, there is nothing in the history of the case to take it out of the class of simple anæmias.

The girl, as some of you have heard her say, is 18 years old now, and she began to have the same symptoms which she has now four years ago. Those symptoms have continued during a large part of the entire four years. They are observable in a marked degree at the present time. They have been the ordinary symptoms of simple anæmia in young women. There is the pallor of the face which we should expect to find; there has been headache, disturbance of the stomach, nausea and vomiting, constipation; and there has been disturbance of the menstrual function, consisting in irregularity and scantiness of the flow. There has been the disposition to dropsy, œdema of the legs occurring as far back as four years ago, but not present in any marked degree now. The disposition to bleeding has been present in slight degree. In her case apparently it has not been from the stomach. She has coughed up a little blood from time to time. Whether the blood comes from the throat, the bronchi or the trachea, we do not know; but the disposition to bleeding from the mucous membranes belongs to the disease. We do not know whether she has had any febrile movement. It is very probable she has had, for in marked anæmia there is very apt to be some febrile movement.

When we come to the actual condition of the blood at the present time we find it about as bad as it is likely to be in these cases of simple anæmia. The hæmoglobin is 20 per cent. We sometimes find it down to 18 per cent. in cases of simple anæmia, but 20 per cent. is a very small proportion, and it means a very well marked case of the disease. In the same way with the red blood cells; it is quite possible in milder cases of simple anæmia to have no diminution of the red blood cells, although the quantity of the hæmoglobin is decreased, but the moment we meet the more severe cases we find also a diminution in the number of the red blood cells. In this case the number is diminished in a very maked degree; it is below 2,000,000, instead of being 5,000,000, in the cubic millimetre.

So that we have both an old and a very decided case of anæmia, yet I should have no hesitation in saying that it is one of simple anæmia, although the disease has lasted so long, and the changes in the blood are so marked at the present time. I should not consider it a case of pernicious anæmia. The difference in the prognosis is very great in these two conditions. If this girl has only a simple anæmia she will get well; if she has pernicious anæmia she will not get well. So that the importance of the diagnosis as regards the prognosis of the case is very great indeed. But, as I said, I should have no hesitation whatever in pronouncing her case one of simple anæmia, and in asserting that, if placed under proper conditions, she will get well. I should feel quite certain of it, and I imagine that the only reason why the disease has continued so long is simply the want of proper treatment. The girl has kept about; she has probably consulted a physician from time to time, has been under treatment for a short time, and then, without getting really better, has gone

back to work, and thus the condition has been protracted during all these years.

For this girl to get better, she must have the proper treatment, and she must also live in the proper way. The medicinal treatment is very simple. It consists in the administration of iron in large quantities, usually in the form of Blaud's pills, which contain the sulphate of iron. We give these patients of Blaud's pills anywhere from six to twenty-four a day. They should receive enough; a small quantity is of no service.

Besides the administration of iron in large quantities you should have the patient inhale oxygen gas ten or fifteen minutes twice a day. In the third place, the bowels must move every day, which may be induced by an enema or some simple laxative. That constitutes the medicinal part of the treatment, and it is exceedingly efficacious. Yet, after all, it is altogether empirical. We do not know why it is that these large quantities of iron are so useful. It evidently cannot be by simply supplying the patient's blood with iron, for we have to give a great deal more than is necessary for this purpose. So of the inhalation of oxygen, I do not think that theoretically very much can be said for it, but practically it is a very important part of the treatment. Then, again, with regard to the constipation—of course anybody is better off for not being constipated, but it makes a greater difference with these patients with anæmia whether they are constipated or not than it does with others. If they remain constipated you do not get the good effects which you ought from iron and oxygen. Thus with regard to these three points in the medicinal treatment, each one of them is empirical; we do not know as well as we would like why the patients improve under them, yet every day's experience shows how much they do.

As to the feeding, I should put this patient upon one solid meal a day, composed of meat and of bread and butter, and during the rest of the twenty-four hours I would feed her on milk alone.

With regard to the mode of life: as this girl is now, I should put her to bed. She is too sick to be up and about. She will improve more rapidly for a time if in bed than if she is allowed to be up. By and by, after the blood had begun to improve, she could begin to get up and go about. Now, all this can probably be done for this girl if she enters a hospital, and that will be the best place for her. It will take, probably, two or three months before she will be well enough to go to work. By the end of two or three months, one can say beforehand with considerable certainty, that the blood will have changed in about this way: Instead of having 20 per cent. of hæmoglobin, it will have about 80 per cent. She will not come up to the normal, but she will have 80 per cent. instead of 20 per cent. Instead of having 1,714,000 red blood cells to the cubic centimetre she will have between 4,000,000 and 5,000,000. The blood will have returned to nearly its natural condition; the other symptoms will have disappeared. There will no longer at that time be any disposition to nausea and vomiting. There will be no disposition to bleeding, she will no longer be short of breath, she will feel strong and well, and able to go to work. That is what we can promise in such a case with very great confidence. But this case being an aggravated one, it is necessary that all parts of the treatment should be carried out. It will not be enough to give this girl some iron and let her go to work. She needs rest in bed; she needs diet, besides iron, oxygen, and enemata to relieve constipation.

PERNICIOUS ANÆMIA.

Case 2.—This old gentlemen was at our clinic on March 21, 1889, and the diagnosis at that time was, not of simple anæmia, but of pernicious anæmia. The examination of the blood then showed that hæmoglobin was down 15 per cent.—a very small quantity. The red blood cells were down to 1,662,000—after all not very much less than in the girl who has just gone out. Taking the man as he was last March and the girl as we have seen her to-day, and there is not very much difference in the composition of the blood in the two cases. In the man the hæmoglobin was 15 against 20 in the girl, and 1,662,000 red blood cells against 1,704,000. There was no increase in the white blood cells at that time.

He was put upon the use of tincture of chloride of iron and of arsenic. On the 21st of March the treatment was begun, and on the 5th of April the hæmoglobin had got up to 22 per cent. On the 20th of April it was 27 per cent., on the 25th it was 22 per cent., and on the 7th of May it was 28 per cent. On the 13th of May the red blood cells had increased to 2,425,000, and the hæmoglobin had increased up to 40 per cent. Thus you see that there was a very substantial improvement in the condition of the blood under the administration of iron and arsenic, from 15 up to 40 per cent. of hæmoglobin, and from one million odd up to two million odd of red blood cells. During this time the man had no fever, and no hæmorrhages. He felt so much better that he went back to his work, and continued to work until a month ago. Then he came back to the clinic with a return of the same symptoms, but much weaker.

The examination of the blood made to-day, shows that the hæmoglobin is 20 per cent., and that the red blood cells are below 1,000,000, in fact down to 300,000. That is a very small number, indeed. It is not often we get below 1,000,000 to the cubic millimeter. The urine has a specific gravity of 1.015; it contains no albumen and no sugar.

Now, this man presents about the same symptoms as the girl we just saw. The changes in the blood are of about the same kind, only differing in degree. Like her, he has had loss of strength, dyspnœa, and other symptoms, but he has not had a disposition to bleed. Although the clinical history was much the same in the two cases, yet I had no hesitation when I saw this man in March, in saying that he had pernicious anæmia instead of simple anæmia, and there is still less reason for doubting that diagnosis at the present time.

Now these cases of pernicious anæmia are sometimes capable of temporary improvement, bnt the rule is that the improvement is not only temporary, but it never goes beyond a certain point. The blood does not get anywhere near back to the normal. It gets better, but it does not get anywhere near the normal; and after improving for a time, the condition of the blood begins to grow worse, and the patient's general condition changes for the worse.

The treatment of these patients then is not nearly as satisfactory as the treatment of the cases of simple anæmia. The iron alone seems to do them but little good. The drug that we rely most upon is arsenic; arsenic given in considerable amount during the twenty-four hours. Although the administration of arsenic constitutes the principal part of the medicinal treatment, yet there also seems to be an advantage in adding to it iron, the inhalation of oxygen, and something to relieve constipation if it exist.

Here, again, the treatment is altogether empirical. We know of no very good reason why arsenic should be of benefit to these patients; we know of no very good reason why iron should not be of as much use to these patients as it is to patients with simple anæmia; nor do we know of any very good reason why oxygen should not be of as much use to these patients as in cases of simple anæmia. But a very little experience will show you the practical difference, that the cases of simple anæmia get well under a certain plan of treatment, and that the cases of pernicious anæmia never do anything better than improve somewhat and then get worse again; and each time that they get worse they are worse than they were the time before.

It is very commonly believed that in simple anæmia the change in the blood is due to a diminished formation of red blood cells and a diminished production of hæmoglobin, and that in pernicious anæmia the cause of the change in the blood is increased destruction of the red blood cells. One observer in particular has gone so far as to locate the place of destruction of the red blood cells in pernicious anæmia in the liver. He believes that in that organ there is constantly going on an excessive destruction of the red blood cells, and that that is the reason for the change seen. All these considerations, however, are so far theoretical; but of one thing we can be certain, and that is the practical difference between a case of simple anæmia and one of pernicious anæmia. But here, again, there are a good many physicians who believe that pernicious anæmia is practically nothing but a bad simple anæmia; that if you have simple anæmia bad enough, you can be said to have pernicious anæmia. This I do not think is true. I think the two conditions are absolutely separate and have nothing to do with each other. At all events, for practical purposes we find that the prognosis and the effects of treatment are altogether different in the two cases. I would advise this man to enter the hospital again.

After the patient had left the room Dr. Delafield continued:

I am very much afraid, however, that when he goes into the hospital this time he will remain there. He has reached the period of his disease now at which we are not likely to get even temporary improvement. With such an excessive diminution in the number of the red blood cells I should not hope for any real improvement at all. The man can be made comfortable, but that is all. I should suppose that he would not be likely to live through the winter. He may be carried off by some intercurrent disease, to which he is more liable than other persons; or he may die, as some patients do, simply in a condition of very great feebleness.

PSEUDO-LEUCÆMIA (?)

Case 3.—This young woman was sent to the clinic as a case of pseudo-leucæmia, or Hodgkin's disease. She says she has been unwell eight months. We observe a tumor near the angle of the inferior maxilla on the left side, which, she says, has been present about two years. It is an enlarged lymphatic in that part of the neck. Some of the other glands in that region are also enlarged, but they do not extend beneath the clavicle. Those on the other side are not enlarged. She says that eight months ago, or in March last, she began to suffer from pains which she describes as commencing in the region of the sacrum and radiating down to the knees, both in front and back. Sometimes a week would pass when she would not have the pains; then they would come on and continue day and night. She vomited at times, and then would lose her appetite; at other times her appetite has been pretty good. She has been troubled with dizziness a good deal, and has been short of breath, but she says she has not coughed and has not spat up blood. There was no swelling of the feet. She remained in bed most of the time from last March until two months ago. She lost flesh, but is now much better than she has been. Her blood has been examined to-day. The percentage of hæm-

oglobin is 65. There is no increase in the number of the white blood cells; the count of the red blood cells has not yet been made. For two weeks she has been taking Fowler's solution, three minims up to seven minims seven times a day.

I doubt whether one would be justified in classifying this case among those of Hogdkin's disease. There seems to be no affection of the glands except those in the neck. This tumor, by the by, ought to be removed. It is very loose and movable; the deeper glands are not large or numerous, and I think there can be no question but it would be wise for her to have it removed as soon as possible. It is quite independent, it seems, of her other troubles. Such glandular enlargements are never good things to have and should always be removed, especially when it can be done as readily as in this case. My assistant had examined the other glands of the body and did not find them enlarged. Two weeks ago he thought he was able to make out some enlargement of the spleen, but he is no longer able to do so.

The history is just one of those which we get now and then, especially from women, in which we find it very difficult to tell how much attention to pay to the symptoms which they lay most stress upon. She had nothing to attract her attention until two years ago, when she noticed an enlargement on the lower part of the face, which went on to increase in size, and is evidently an enlarged gland, due either to simple or tubercular adenitis. She went along with this enlarged gland, but feeling perfectly well, until last March. Then she felt so weak that she went to bed, and she began to have severe attacks of pain which, so far as I can make out from her statement, began in the sacrum. From there they would extend down the thigh, but not following the course of any particular nerve; she felt them, she said, throughout the entire thigh down to the knees. When she had these attacks of pain she also had vomiting and inability to take food. When she did not have the pains she did not have to vomit. Sometimes she would have the pains every day, sometimes she would skip a week, and lately she had not had them for a month or so. The attacks of pain, the weakness, and the disturbance of the stomach seem to have been the prominent symptoms. Two months ago she got a little better, but not much. Then she came here to the dispensary and has been coming seven weeks. She was given arsenic, and during her attendance at the dispensary she has improved a good deal. She now feels a good deal better.

When we look at her the general appearance is not particularly bad. She is flushed, of course, with the excitement of being here, but her color is not bad. She is in moderate flesh; she says she has gained in weight lately. There is nothing to call attention to the heart, lungs, or any of the viscera. The heart's action is rapid, but there is no murmur.

This is a sort of case which is more common in private practice than it is in cases which we see here. I should be disposed to class it with the patients, especially women, who suffer a great deal, sometimes in one way, sometimes in another, without really having any definite disease of any part of the body. I do not mean to say that the sufferings of these patients are imaginary; they are perfectly real. They are sick; they require treatment; and yet you can not ascribe the sickness to any of the ordinary categories. They are very often somewhat anæmic; they have a diminution in the quantity of hæmoglobin, but yet they are not typical cases of simple anæmia. They do not behave in the same way, by any means. There is a change in the composition of the blood; but, as said, they do not fall into the class of cases of simple anæmia. When they have pains they are very apt to have them as this young woman has had them—in the wrong place; I mean the place that does not belong to any of the regular kinds of pain. Instead of having pain beginning in a particular place and behaving in a way which pains do that belong to diseases we know of, they get up some queer irregular pain, as in this girl. It hurts as much, evidently, yet it is equally evident that it does not belong to the pains which have a real cause. I mean by real cause something like inflammation of a nerve or of bones, or pressure upon a nerve. It is evident from this young woman's description that her pain can not be due to any such cause as that; it is one of the cases of irregular pain.

Of course, to be at all certain about such a case as this you should see it more than once. You should ask a good many questions which I do not care to ask her here. The moral condition comes into play largely; and so far as treatment is concerned, they are cases for management rather than anything else—the moral management, the regulation of the diet and of the mode of life. The particular medicine which you give them is not of so much consequence, so long as it is not opium or bromides (or the different drugs given for nervous troubles). The change in the blood, the anæmia which these patients have, does not, as a rule, respond very readily to the use of iron; it responds much more readily to the mode of life, to diet and exercise. Nor does it respond very well to the use of arsenic. This drug is sometimes of service, sometimes it is not. Since it seems to have been of benefit in this case we will continue it.

MALARIAL POISONING.

Case 4.—The case of this young man is a perfectly straightforward one of malarial poisoning. He works on board one of the steamers which

ply between here and the West Indies, stopping at different points, for a longer or shorter time, where the severer forms of malarial disorders prevail. He was in a hospital at Jamaica, but got better and came out again. His illness dates back seven weeks; during more or less of this time he has had headache, has vomited, has not cared for his food, has felt hot, but has not had chills. His temperature was taken five days ago, when it was 102° F.; to-day it is 98°. His urine has a specific gravity of 1.025; it contains no albumen. On physical examination we find his spleen distinctly enlarged; the liver, on the other hand, is not enlarged. His blood has been examined and found to contain a large number of crescent-shaped pigmented bodies.

The man has acquired not intermittent nor remittent fever, but a form of malarial poisoning which we commonly call malarial cachexia, in which the main change is in the general condition of the patient. Such patients may have a little fever, but it is not a prominent symptom. They lose flesh and strength, and they may have the characteristic changes in the blood.

MEDICAL PROGRESS.

CHRYSAROBIN IN HÆMORRHOIDS.—DR. KOSOBUDSKI, writing in the *Russkaya Meditsina* on Unna's plan of treating hæmorrhoids with chrysarobin, says that he has employed it—or a modification of it—in twenty-two cases, and has found it on the whole very satisfactory. He does not, however, employ quite such strong preparations as Unna. His plan is to wash the hæmorrhoid with a weak carbolic or creolin lotion, and then to dry it well with cotton wool, after which he applies three or four times a day an ointment consisting of chrysarobin 8 parts, iodoform 3 parts, extract of belladonna 6 parts, and vaseline 150 parts. For internal piles suppositories are employed, which are composed as follows: Chrysarobin, 1 grain; iodoform, ¼ grain; extract of belladonna, ⅛ grain; cacao butter, 30 grains; glycerine sufficient to enable the mass to be made into the form of a suppository. If there is much hæmorrhage a tannin suppository must be used. After three or four days of this treatment the pain and hæmorrhage disappear, and after three months or so the hæmorrhoids are found to have almost completely shrivelled up.—*Lancet.*

PARATYPHLITIC ABSCESS.—DR. J. F. JENKINS, of Tecumseh, Mich., at a meeting of the Michigan State Medical Society, related a case of paratyphlitic abscess. Paul P., æt. 10 years, had an attack of paratyphlitis in December, 1886, following catarrhal pneumonia. In fact, before he began to convalesce from the pneumonic trouble, the symptoms of paratyphlitis began to manifest themselves. He was at that time confined to the bed about three weeks with the disease, which eventually terminated in resolution.

The patient enjoyed good health until June 2, 1888, when Dr. Jenkins was again called to see him. He complained of pain in the right iliac region, and in that locality pressure elicited a great deal of tenderness. The bowels were constipated, and during the course of the disease there was more or less tympanites. There was occasionally a slight degree of nausea, but he seldom or never vomited. Disuria was troublesome at various periods of his illness, and during the same period priapism was occasionally observed. The right thigh was flexed upon the body during the course of the disease. This was a marked condition in the first attack. He frequently complained of pain extending from the hip to the knee. The pain in the bowels was never severe, and only required a limited amount of anodynes to control it. The temperature ranged from 100° F. to 103° F. He seldom or never complained of being chilly. During his illness his appetite was moderate and he slept tolerably well.

July 19, nearly seven weeks from the date when his illness commenced, the patient was placed under chloroform by Dr. L. G. North. Dr. Jenkins brought the right limb, which had been flexed, into a straight position, which revealed an elongated tumor in the iliac fossa about the size of a walnut; and by the use of the hypodermic syringe, demonstrated the fact that the tumor contained pus. He made an incision into the tumor, and nearly eight ounces of very offensive pus was evacuated from it. A moderate sized drainage tube was introduced and extended to the bottom of the cavity of the abscess. It may be well to mention here that this cavity was never rendered aseptic. The patient henceforth rapidly recovered, notwithstanding the weather at that season of the year was extremely warm. This boy only a short time since passed through his third attack of paratyphlitis, and the formation of the second abscess, the symptoms being similar to the previous attacks already mentioned.

His illness commenced on April 1, of this year, and a week from that date, he was again placed under the influence of chloroform by Dr. North, and an incision made into the abscess, and the contents evacuated. Dr. Jenkins then introduced his finger into the cavity in order to determine whether there was anything that he could detect, which produced the abscess, but with a negative result. It was afterwards carefully washed out with carbolized water, and a drainage tube inserted deep enough to reach the bottom of the cavity. During several days afterwards it was

syringed out with carbolized water, and ten days after evacuating the abscess the wound healed and the patient was able to sit up.

The abscesses above described and operated upon, were extra-peritoneal. The first abscess was not operated upon until nearly seven weeks had elapsed from the commencement of the attack of paratyphlitis; from the fact that the parents would not consent to an earlier operation. The principal factor in producing this Fabian policy in their minds, and in Dr. Jenkin's, was that the first attack of the disease terminated in resolution, after an illness of three weeks. The second abscess was opened on the seventh day from the commencement of the attack, and the patient made a rapid recovery.

The great difficulty is to diagnose between an extra- and an intra-peritoneal abscess. In either case it is an all important factor to determine when to operate. The history of the case, the condition of the patient, the use of the hypodermic syringe, or the aspirator, will go far in determining the necessity of an operation which, in many cases, if performed sufficiently early, will in all probability save the life of the patient, or on the other hand, by prolonging the date of an operation may jeopardize his life.

DISINFECTION OF THE BIRTH-CANAL.—In order to secure complete disinfection of the vagina and cervix, DÖDERLEIN and GÜNTHER have made made many experiments. The employment of simple mechanical measures, such as scouring with the finger and irrigation with sterilized water, has proved inadequate. The finger anointed with vaseline to enable it to reach the various vaginal folds, has given no better results. Irrigation with solutions of sublimate and carbolic acid have only produced incomplete disinfection, while they have the disadvantage of leaving the mucous membrane dry and harsh. Contrary to Steffeck (who does not like creoline), the writers have obtained their best results with creoline. Their method is to annoint the finger with a lubricant mixed with creoline, and then rub and scour carefully the mucous membrane of the genital passages with it. This is followed by copious injections of a 2 per cent. solution of creoline. After this operation the mucous membrane remains soft and supple, while the vagina has always been found to be free from all germs.—Maygrier, *Rev. des Sc. Méd.*

TREATMENT OF SYPHILIS BY SUBCUTANEOUS INJECTIONS OF MERCURIAL PREPARATIONS.—H. LELOIR and M. A. TAVERNIER have administered, during the last two years, 1573 injections in the treatment of syphilis. The cases were treated as follows: Eight hundred and seventy-five with calomel in suspension in vaseline oil (1 to 12); 642 with the yellow oxide suspended in oil of vaseline (1 to 12); 56 with gray oil according to Neisser's formula (vaseline oil 40, etherial tincture of benzoin 5, purified mercury 20).

The injections of calomel and the yellow oxide (half a Pravaz syringeful) were repeated every eight days, the needle being thrust deeply in the muscles of the fossa behind the trochanters; the injection of the gray oil (one-third of a syringeful) was given every nine days in the buttocks. The punctures were covered with mercurial plaster. These injections are especially useful in cases of erythematous eruptions or the eruptions of resolving syphilomata on the integument; they possess the sole merit of acting rapidly, not to say harshly. Their action upon mucous surfaces is almost *nil*. They are more apt to be followed by recidives than are inunctions, and are less certain than the latter in their effects. They should not be used in non-resolving syphilomata in cerebro-spinal and visceral syphilis, or in cases of pregnant women or in children. They are especially applicable in the treatment of prostitutes, while in ordinary private practice their use is attended with serious inconveniences.—*Gazette Méd. de Liège.*

HYDRASTIS IN MEMBRANOUS DYSMENORRHŒA.—DR. FRANZ JORDÁN relates in a Hungarian medical journal an interesting case of most obstinate membranous dysmenorrhœa, in which after many years had been spent in trying all manner of different methods of treatment, hydrastis canadensis rapidly effected a cure. Dr. Jordán employed the liquid extract of hydrastis canadensis, twenty-five drops of which he ordered twice a day. This very soon began to produce an appreciable effect, and after a short time the medicine was required only at the time of menstruation or for a few days previously, the loss of blood becoming very light, and the pain disappearing altogether.—*Lancet.*

DISINFECTION OF SICK ROOMS.—According to KELDYCH (*Journal de Méd.*, Sept. 22, 1889), an adequate disinfection of rooms may be secured by saturating the air with eucalyptol, a disinfectant that is not dangerous to inhale, and that has no injurious effect upon furniture. Keldych has shown that an examination of the air of clinical lecture rooms, when thus treated, proves it to be free from bacteria which can be cultivated upon gelatine. Moved cultures can still be produced, but the action of these upon the higher animals, though not well understood, appears to be harmless.

PRECOCIOUS MENSTRUATION.—DR. A. J. JAGOE, of Hernando, reports the case of a child four years of age who has been menstruating for two years. The child, a negro, was exhibited at the local Medical Society and found to be healthy; its breasts are well developed and the pubes covered with hair.—*Memphis Med. Monthly.*

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SATURDAY, NOVEMBER 30, 1889.

A NEGLECTED PHASE OF ENURESIS NOCTURNA.

So much is continually appearing in medical journals on the subject of enuresis nocturna, and so many remedies are being recommended as wholly reliable and efficacious in its treatment, that it would appear almost superfluous for us to refer to it. And yet, if we examine all this literature, we will see that it has a very one-sided aspect; that (except in cases arising from reflex irritation or organic lesions, whose treatment is indicated by the discovery of such a cause—a class which we do not propose to consider here) nearly all of the remedies advised are used either empirically, or their use is based on the idea that the origin is invariably, as TROUSSEAU declared, a neurosis, an excessive irritability, or exaggerated tonicity of the muscular fibres of the bladder, subservient to a hypersensitive condition of the mucous membrane of the organ; and the little sufferers are accordingly dosed in progressively increasing quantities with belladonna, atropia, bromides or other sedatives; so that, in consideration of the prejudicial manner in which this subject is generally treated, it seems that there is still room for discussion directing our attention more in the channel of a judicious inquiry into its causation and pathology, which naturally calls for a clear perception of the anatomy and physiology of the parts.

First with regard to the mature type, as presented by the adult male.

The detrusor and sphincter muscles of the vesical system are innervated from two sources: The detrusors, those contained within the bladder walls, are supplied from the sympathetic system, and are, therefore, involuntary; the sphincters, two in number, of which the external is formed by the compressor urethræ (A, fig. 1), the internal by the ring of muscle making up the base of the prostate (B, fig. 1), are supplied from two sources: the external one is supplied entirely from the spinal cord, and is, therefore, entirely voluntary; but the internal or prostatic sphincter, while possessing some voluntary fibres, is composed mainly of involuntary muscle. As a result of this the process of collection and voidance of urine is carried out in this way:[1] We will imagine fig. 1 to represent an empty bladder.

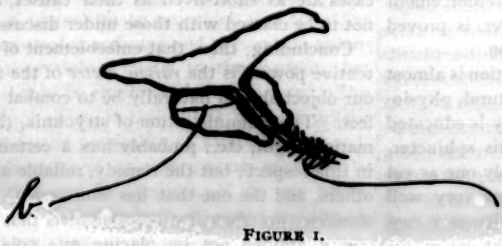

FIGURE 1.

FIGURE 2.

Both sphincters are then closed and the point of separation between the bladder cavity and the urethra is clearly defined. But as urine accumulates in the bladder, it gradually lifts up and distends the vesical walls until the amount of distension reaches a certain degree, when the urine pressure becomes sufficient to divulse, to a slight extent, the urethral opening, allowing some of the urine to trickle into this prostatic portion, soon distending it also. It is then that the desire to urinate is first felt. But if it is not convenient for the person to answer the call at that time, his

[1] "Gonorrhœa der Sexualorgane," Finger, 1888.

will acts on the sphincter—the external one more especially—which remains contracted until such time as he is willing to pass his water. Then the bladder is in a condition about like Fig. 2, and the cavities of the prostate and bladder are merged into one. When the person does wish to pass his water, the external sphincter and that part of the prostatic muscle located at its apex relax their vigil and open up a passage for the urine.

That all this is true may be proved in various ways, the simplest being to introduce a catheter when the bladder contains only a small amount of urine, mark the length of the catheter within the urethra just when the first drops of urine appear, then wait till the bladder is quite full and repeat the experiment, when it will be found that fully three-quarters of an inch less of tubing will be required now to "strike water" than was necessary in the first experiment, showing the shortening of the urethra in consequence of the encroachment of the bladder cavity on it. So that the power of voluntarily holding a bladderful of urine depends not so much on the strength of this internal sphincter as it does on the strength and amount of control which the person has over the external one. But, on the other hand, that the external needs the support and reënforcement of the internal or prostatic sphincter, is proved by the very affection under discussion.

In early infancy the retentive function is almost *nil*, and incontinence is therefore natural, physiological. Later, in childhood, the boy is educated up to and practices control over his sphincter, the external voluntary one, the only one as yet in working order, which he manages very well during the day, when urination is frequent and calls are promptly met; but at night, when his will-power is banished in the land of dreams, the urine surprises the slumbering sphincter, steals past it and escapes into the bed. But with the development, towards puberty, of the prostatic tissue and the accession of involuntary sphincter action, such incontinence, whether nocturnal or diurnal, ceases; the involuntary comes to the assistance of the voluntary, bears its share of the burden, and the infantile annoyance becomes a nonentity. Should it persist after this epoch, we must attribute it to a continued weakness or lack of development on the part of one or both of the sphincters.

But it may be contended that this is not necessarily so—that the hyperexcitability first referred to will explain this phenomena equally as well. What do we know about "hyperexcitability" or irritability of the bladder? That wherever there *is* such a condition, it manifests its presence in unmistakable terms. There is frequency of urination, by day as well as by night, with pain that admits of no dallying when the call to urinate is felt. What man with an inflamed or irritable bladder-neck dares to disregard the signal of accumulated urine?

On the other hand, do we hear the little subjects of nocturnal incontinence make any complaints of this sort? If we listen attentively to his or his mother's description of the trouble, we will probably soon disabuse ourselves of preformed ideas of excitability, etc. The complaint is simply of *an inability to hold water*. There is no pain, no urgent desire to urinate, other than that produced by the remembrance that unless he take the proper care, the consequences of parental wrath will follow the soiling of his clothes.

To be sure, we must admit that there are some cases for which irritability, in consequence of hyperacidity of the urine, or some such transient condition, must be held accountable, but such cases are as short-lived as their causes, and are not to be classed with those under discussion.

Concluding, then, that enfeeblement of the retentive powers is the *raison d'etre* of the malady, our object should naturally be to combat this defect. The administration of strychnia, rhus aromatica, ergot, etc., probably has a certain value in this respect; but the remedy, reliable above all others, and the one that has done much to substantiate the views just presented, is that of electricity, applied not by placing one pole on the perineum and the other on the abdomen, in the vague hope that, guided by a kind Providence, the current may pass through the enfeebled muscles; but it should be conducted *through* them by means of an insulated electrode introduced into the urethra after the manner commonly employed in treating strictures with electrolysis. GUYON, the originator of this method, directs that each séance be not longer than two or three minutes in duration, and not too frequent. Only the sphincters are to be galvanized. The female urethra, surrounded as it is by sphincter muscle throughout its extent, is treated by passing the

electrode slowly back and forth from meatus to vesical neck.

Successes with this method, in both male and female patients, have been obtained and reported by GUYON,[2] JAMIN[3] and others, whose names we do not now recall, and success in each case was forcibly emphasized by previous records of repeated failures with other established and approved plans.

We do not wish to be understood as advocating this as an invariably appropriate treatment for infantile incontinence, but our object is simply to express a belief that it is too little used in many cases in which close questioning and a definite diagnosis would point to it as the only rational method.

THE TOPICAL TREATMENT OF DIPHTHERIA.

There is a widespread and seemingly well grounded belief in the primarily local nature of diphtheria. If the belief be true, local treatment is demanded, and that at the earliest possible moment. And although the question of the local nature is one of great importance, the practitioner ought not to permit his own skepticism to master his method of treatment. Much of the danger inherent in the disease lies in the possible extension of the diphtheritic process into the lower respiratory passages. If, therefore, there is a method of topical treatment which will arrest the development of membrane and prevent its extension without doing injury to the patient, that remedy should be employed in every case. The doubt which exists in the minds of some practitioners as to the possibility of attaining this end, and the diversity of opinion among others as to how the end may be attained are, in one sense, unfortunate; but they have no doubt had the effect of stimulating investigation.

Almost every remedy and every conceivable combination of remedies has had its advocates. Lunar caustic, one of the earliest applications, is now seldom employed, except at the commencement of the disease when the membrane is yet very limited in extent. MORELL MACKENZIE pronounces caustics dangerous and astringents harmful, and prefers as a topical application a solution of chloral hydrate. Corrosive sublimate, the best of all parasiticides, should, *a priori*, be the best agent for local application, and it has of late been used by many with much success, but it must obviously be used with due caution.

In the *American Journal of the Medical Sciences* for November, MULHALL, of St. Louis, proposes washing out the throat with about a cupful of an antiseptic solution by means of an ordinary household syringe at intervals not exceeding three hours in length. A diluted mixture of carbolic acid and compound solution of iodine is recommended as best suited to the purpose. The author asserts that the method of treatment may be practiced with impunity even on very young children; but we should fear for the result in less skilful hands.

DETHIL'S treatment with turpentine, tar and resin should not be lost sight of, for we have combined in it both local and systemical treatment of the patient, and disinfection to some extent of the apartment or the entire dwelling. A more agreeable if not more efficient mode of procedure is that of J. LEWIS SMITH; who recommends the constant ebullition of a mixture of eucalyptus oil and turpentine in the proportion of 2 drachms to 8 ozs. in a quart of water. SCHMIEDLER has more recently practiced the local application of pure turpentine.

We have repeatedly seen permanent arrestation of all throat symptoms follow the thorough application of the solution of subsulphate of iron (Monsell's solution), as practiced by WHITTAKER, of Cincinnati, and reported by him in 1881, after its successful use in a series of nineteen cases. The method consists in passing a brush or pledget of cotton saturated with the solution up into the post-palatine space, permitting the spontaneous muscular contraction which follows to express the medicament, thus causing an inundation of the entire mucous membrane. The application is attended with no danger of injuring the mucous surfaces and is followed by no more serious consequences than retching and sometimes vomiting. In this application we have probably the combined action of an astringent and a parasiticide. As an astringent, its use is indicated to retard the growth of membrane and to prevent the absorption of ptomaines. As a parasiticide, it is directed against the supposed cause of the disease. Whittaker is quoted as having recently reiterated to the Academy of Medicine his confidence in the method. Favorable reports have appeared from other sources also, rendering it highly proper that the remedy should receive a thorough trial.

[2] "Leçons Cliniques sur les Mal. des Voies Urinaires," p. 211.
[3] Journ. de Med. de Paris, No. 15, 1889.

EDITORIAL NOTES.

HOME.

HYGIENE AND PHYSICAL CULTURE AT GETTYSBURG.—The parents of the late Dr. Charles H. Graff have donated the sum of $25,000 to the Pennsylvania Hospital, Gettysburg, for the purpose of endowing a professorship of hygiene and physical culture in that institution.

SOUTHERN GYNECOLOGICAL ASSOCIATION.—The Southern Surgical and Gynecological Association closed its annual session in Nashville, Tenn., on the 14th inst. The next meeting will be held in Atlanta, Ga. Dr. George J. Engelmann, of St. Louis, was elected president; Dr. B. E. Hadra, of Galveston, Texas, first vice-president; Dr. Duncan Eve, of Nashville, Tenn., second vice-president; Dr. W. E. B. Davis, of Birmingham, Ala., secretary, and Dr. Hardin P. Cochrane, of Birmingham, Ala., treasurer.

THE CENTRAL TEXAS MEDICAL ASSOCIATION will meet in Waco, Tuesday, January 14, 1890, for which meeting the following programme has been appointed: "Cerebro-Spinal Meningitis," by Dr. J. C. J. King; "Pneumonia," by Dr. C. T. Young; "Hæmorrhoids," by Dr. J. E. Brown; "Cystitis," by Dr. W. C. Blalock; "Diseases Incident to Dentition," by Dr. J. M. Witt.

NORTH TEXAS MEDICAL ASSOCIATION.—The next meeting of this Association will be held in Gainesville, Texas, beginning on Tuesday, December 10, 1889, and continue for three days. The meeting will be called to order promptly at 7:30 o'clock P.M. The arrival of the trains late in the afternoon occasions the selection of this hour, in order that valuable time may not be lost. The following programme has been issued:

Section on Practice of Medicine.—"Exophthalmic Goitre," by Dr. T. M. Taylor, Sherman; "Valvular Lesions of the Heart," by Dr. M. C. McBride, Lebanon; "Acute Articular Rheumatism," by Dr. J. D. Bedford, Honey Grove.

Section on Obstetrics and Gynecology.—"Puerperal Fever," by Dr. O. H. Caldwell, Dodds; "Diagnosis and Treatment of Pelvic Cellulitis," by Dr. J. E. Gilcreest, Gainesville; "The Most Desirable Position for a Woman in Labor," by Dr. Alonzo Sims, McKinney.

Section on Surgery.—"Traumatic Cataract," by Dr. R. H. Chilton, Dallas; "The Indications in the Surgery of the Larynx and Trachea," by Dr. R. W. Rush, Paris; "Surgical Cases, Including Two Cases of Laparotomy," by Dr. J. M. Inge, Denton.

Volunteer Papers by Request.—"A New Artificial Drum Membrane," by Dr. H. N. Spencer, St. Louis; "Herpes Progenitalis," by Dr. G. Frank Lydston, Chicago, Ill.; "Extirpation of the Ileo-Cæcal Junction," by Dr. J. F. Hooks, Paris; "Cerebro-Spinal Meningitis," by Dr. S. D. Moore, Van Alstyne.

FOREIGN.

DR. G. GRANVILLE BANTOCK has been elected an Honorary Fellow of the American Association of Obstetricians and Gynæcologists.

FIRST AID IN THE ITALIAN ARMY.—The Italian Minister of War has requested the medical department to draw up a programme of instruction in the elements of medicine and surgery suitable for use in military schools. It is intended that all cadets and non-commissioned officers shall make themselves competent to give first aid in cases of accident and other sudden emergencies.

THE AMERICAN HOSPITAL AT TEHERAN.—The United States Minister to the court of the Shah, recently laid the corner stone of an American hospital at Teheran. The funds for its erection have been raised partly in the United States and partly in Persia. Dr. W. W. Torrence, of Teheran, was the originator of the movement.

THE SCIENTIFIC GRANTS OF THE BRITISH MEDICAL ASSOCIATION.—We learn from its official organ that Dr. Sidney Martin has, on the recommendation of the Scientific Grants Committee, been reappointed by the Association one of its research scholars for one year. The following additional grants have been made by the Council in accordance with the recommendation of the Scientific Grants Committee: Mr. Hankin £50 to continue his investigations into the nature of an albumose that has been obtained from anthrax cultures under certain conditions; Dr. R. Kirk £10 for a research on alcaptonuria and on the distinction between albumen and mucin in the urine, and some other points in connection with proteids in that fluid; Dr. J. R. Bradford £15 for some experiments on the action of the cortex cerebri on the vaso-motor system; Dr. H. H. Ashdown £10 for a continued research upon absorption from the bladder.

TOPICS OF THE WEEK.

THE ANATOMY OF THE FUTURE.

Some years ago an elderly professor of anatomy expressed his thankfulness that in the branch he taught there was no harassing progress. Physiology and chemistry, he said, were undergoing changes from one day to another, but anatomy was always anatomy, a bone was always a bone, and there was no wearisome struggle to keep up with the rushing progress of the times. And such is the view of anatomy entertained by many of the profession. Not a few of us think, when we look back over a number of years spent in active practice, that we started on our journey with much more baggage than was necessary in the way of memorized anatomical truths; that we could have done with a smaller quantity, but that that smaller quantity should have been better selected. We question whether the anatomy taught in our colleges to-day is the anatomy of the future. Is it not rather a result of the labor of successive generations of book-writers, each showing more eagerness to add new facts to the mass than to examine into and verify the old ones?

The anatomy of the future will not resemble that taught now. The scope of the subject requires enlarging, and for the narrowing memory work done to-day a broad view of the whole must be substituted. In other words, the student should first acquire a knowledge of general and comparative anatomy, and subsequently study its application to the human body. To begin work with the descriptive anatomy of man is working backward. Such a course has been likened to the study of an ultimate twig of a tree by a person who is ignorant of the character of the larger branches, of the trunk, and of the soil on which the tree grew.

Embryology urgently demands attention as a necessary introduction to the study of the parts of the body and as a subject the knowledge of which is of direct practical advantage in daily professional life. Observe how important has become the anatomy of the embryo in connection with the study of disease. The disposition of the layers of the embryo must be clearly understood to enable one to understand the structures of the body and the diseases developing in those structures. Studies such as these lighten the student's task. Take, for instance, the arrangement of the great vessels in the root of the neck. The disposition of these structures is learned commonly by the study of a scheme or diagram, perhaps by the friendly aid of a cunningly devised "tip." The relations of these vessels could, by the study of development, be so impressed upon the student's mind as never to be forgotten. Can any of our readers forget what a bugbear the peritoneum was? Can you put your hands on your hearts and say that you thoroughly understand all about it now? And yet, when the peritoneum is studied from its early and simple state there will be no longer any difficulty either in comprehending or remembering the arrangement of its folds.

The very great advance made of late years in the study of nervous diseases renders a change in anatomical teaching very necessary. In our day the anatomy of the arteries was paramount, and the nervous system occupied a position of secondary importance. Yet the nerves, their cutaneous distribution, their communications with central ganglia and with one another, are matters of daily, almost hourly, consideration in the round of a doctor's visits, while of the arteries, over which we spent such time and such labor, there is rarely occasion to think. The practitioner is constantly meeting with nervous manifestations the correct interpretation of which renders a clear knowledge of nerve distribution necessary, while it is possible for him to practice for the whole course of his natural existence without ever being called upon to tie an artery. Should such a demand be made, he will seize the bleeding point in the wound, secure it, save his patient, and then go home to study the vascular system afterward. The statement has been made, we think by the late Dr. Fothergill, that the chances of an ordinary practitioner being called upon to tie the subclavian are almost equal to those of his meeting his death by lightning stroke.

To render the study of anatomy attractive and at the same time thoroughly useful, a complete change in our present system is called for, and teachers will soon have to consider the importance of comparative anatomy and of embryology as introductory studies, and the necessity of putting the nervous system in its proper place as the most important department of the human body, and not waste their energies in teaching the relations of arteries with which the student is unlikely ever to have anything to do.—Editorial—*N. Y. Med. Jour.*

THE PULSE IN DISEASE.

While the clinician is accustomed to feel the pulse of his patient in order to add to his knowledge concerning the case before him, we think that he rarely does so because he expects to gain more than a general idea of the state of the circulatory apparatus, and with no attempt on his part to go deeper and determine the causes which produce the changes which he is so apt to note in his daily life.

We have already called attention in an earlier number of the Magazine to the stimulating influence which heat exercises in moderate amount upon the heart and its nervous ganglia, and have shown how the rapid pulse of fever is due to a simulation of the cardiac accelerator nerves. We are accustomed to regard a rapid pulse as a concomitant of fever and to do no more, forgetting how the sudden fall of a high temperature may be followed by a cardiac failure, not due, as some have supposed, to exhaustion, but to the withdrawal of the accustomed stimulation. From the studies of Brunton and others, we may have seen this fundamental fact concerning the pulse proved by the most positive experimentation.

The causes of collapse in the course of an acute disease such as scarlet fever, for example, are not so largely due to general exhaustion as we suppose. It is a matter of common-stock knowledge that excessive stimulation of any portion of the body means exhaustion. In a fever the high-bounding pulse of the early stages denotes not only an increased action of the heart, but also an in-

crease in the blood-pressure, from the excitement of the vaso-motor centre in the medulla. Under these circumstances the high fever suddenly drops, producing collapse, or, the fever continuing, a palsy ensues from excessive action. Such a result does not evidence nervous failure, but circulatory break down. Similarly the soft, compressible pulse of the person whose muscles are relaxed and flabby, evidences general lack of tone.

We have the several causes of rapid pulse. Fever, by its heat, exhaustion of the vagus, imperfect cardiac action, by which the tissues are strained and call for more blood, and finally relaxation of the blood-paths, whereby the resistance to the heart is decreased, and the heart rushes on unhindered and pumping into a huge expanse of blood-vessels.

The causes of the slowing of the pulse are equally numerous. The diminuation of pulse-rate by cold so seldom influence the heart in daily life as to be an unknown factor, but the vagal irritation and high arterial pressure are constantly at work, and it is often the part of the physician to relieve the spasm of the blood-vessels rather than to give stimulants to support the heart. By remembering facts such as these, we are often able to treat diseased states with not only a better appreciation of the requirements of the patient, but also with a clear understanding of the reasons for each and every change of treatment.—*University Med. Magazine.*

THE SPECULUM IN ANCIENT SURGERY.

DR. ALI COHEN, of Gröningen, describes, in the *Nederland Tidschrift van Geneeskunde*, a remarkable passage in the Talmudic treatise called the Niddah. The physician is there instructed, when it is uncertain whether hæmorrhage proceeds from the vagina or the uterus, to introduce a "siphopheroth" into which a "mechul" is introduced bearing "mouch." When the "mouch" is found, on retraction, to be covered with blood, that shows, according to the Niddah, that the hæmorrhage is uterine. It is expressly stated that the apparatus does not wound the patient in any way. The "siphopheroth" was a cone of lead; its orifice was bent inwards, so as not to wound the vagina. The term is manifestly corrupted from the Greek. The "mechul" was a long wooden rod, and "mouch" signifies a preparation very like charpie. Thus the mechul and mouch were the equivalents of the speculum forceps and wool. The siphopheroth was not the strict homologue of the speculum, but rather a contrivance meant to guard against a source of fallacy respecting the seat of hæmorrhage in pelvic disease. It is not stated that the instrument was designed for direct inspection of the cervix. Facts of this kind, unearthed by Dr. Cohen, are of considerable interest. They show that the sound scientific methods and ideas which prevailed in the old civilization of the Mediterranean basin were not confined to the Egyptians, Chaldees, and Græco-Roman nationalities, but also certainly flourished in Judea. Historians are fond of tracing the arrest of true scientific research, so marked in the Middle Ages, to the blending of Græco-Roman and Semitic ideas, so favorable to humanity in other respects. That very blending brought about more than one enlightened and philanthropic religious system. Logically, it should have aided science. But science remained in abeyance till the Renaissance. The fault probably lay not in Christian and Jewish systems of civilization, but in the intellect of the Teutonic and Latin nations, which was insufficiently developed during the Middle ages to appreciate science. —*Brit. Med. Journal.*

THE GRAPHIC ARTS IN MEDICINE.

On Friday, November 1st, a meeting was held in the large theater of the medical school of St. George's Hospital, with Sir Prescott Hewett in the chair, to inaugurate a society for the encouragement of the pictorial and allied arts amongst past and present students of the hospital. In opening the meeting the Chairman expressed his opinion of the extreme value of drawing and painting to the medical man, not only for the actual results produced, but also, if seriously followed, on account of the value of the training. He then related how his pre-medical career had been passed in a French studio, and how the training had developed his accuracy of sight, and of what great importance this had been to him in his surgical work. Referring to photography, he mentioned that its importance was becoming daily more and more recognited, both in clinical and museum work, and reminded his hearers that modern photography owed its recent great progress to the enthusiasm of amateurs. Dr. Dickinson formally moved: "That a society be formed in connection with St. George's Hospital for the purpose of encouraging sketching, painting, engraving, modeling, carving, photography, and the arts of representation in general." One of the ways in which it was proposed to attain this end was to hold a meeting of the society at least once a year, at which members should exhibit any of their productions that could be included under the above headings. The meeting closed, after the election of officers and council, with a very cordial vote of thanks to Sir Prescott Hewett for taking the chair, and the society is fortunate to have secured him as its first President. Past students of St. George's who may be desirous of joining the society are requested to send their names to Dr. Penrose, the Honorary Secretary, at the hospital. —*British Medical Journal.*

VIRCHOW AND THE DARWINIAN THEORY.

According to the Vienna correspondent of the *British Medical Journal*, in Professor Virchow's presidential address at the recent meeting of the Anthropological Congress, the Darwinian theory was referred to, and he said that the intermediate link that should bring man and the ape into connection—the proper "prosanthropos"—had been sought for in vain. It was impossible even to determine the descent of single races from others; and it could be asserted that among the ancient races there was none that stood in any nearer relationship to the ape than ourselves. There was no tribe of people in the world that we were unacquainted with; and not one of the known tribes could justly be considered ape-like, appearances common to apes—such as prominences of the skull—being insufficient evidence of relationship. There was evidence that in the course of 5,000 years no remarkable changes of type had taken place. This adds to the evidence of the impassibility of the chasm between the highest type of anthropoid ape and the lowest type of man.—*New York Medical Journal.*

PRACTICAL NOTES.

BACTERIA IN WATER.

Water may appear clear, yet swarm with bacteria, nor does freezing much lessen the danger of water, since many bacteria are unaffected by freezing. Ice sometimes contains the bacteria of typhoid fever, indeed it may be nothing short of a congealed emulsion of bacteria with which we can inoculate ourselves. The protection of water from pollution by sewage is a problem which concerns everybody. Absolute safety can only be obtained by the use of ice artificially frozen.—Dr. C. G. Jackson.

THE TREATMENT OF ECZEMA.

Dr. Unna, of Hamburg, publishes in the *Monat. für Derm.*, a paper on the Diagnosis, Etiology, and Treatment of Eczema. He says that even before the experimental cultivation of bacilli exact clinical observation had distinguished a number of entirely different types of eczema, and he thinks that each different type will be found to require a different mode of treatment. The type most frequently seen in Hamburg is seborrhœic eczema, and the parasite causing it is the same which in the first instant produces pityriasis capitis. Those persons who suffer from seborrhœic eczema of the head, including those affected with pityriasis capitis, are apt to suffer from the same kind of eczema on other parts of the skin. Dr. Unna has repeatedly pointed out that we possess a series of valuable remedies for the treatment of seborrhœic eczema in all its forms—viz., sulphur, resorcin, chrysarobin, and pyrogallol. Of these remedies resorcin is the best, as being the least likely to produce local or general ill effects. It may also be used in an alcoholic or watery solution, or in the form of ointment, paste, soap or powder. Dr. Unna's favorite formula is a solution of three drachms of finely-powdered resorcin with an equal quantity of glycerine in 6 ounces of spirits of wine, diluted with four times the quantity of water or chamomile tea. A thin layer of cotton wool well moistened with the solution is applied, covered with some waterproof material, and fastened by a bandage. These applications are particularly useful when the treatment is prolonged, or when it is carried out by night. They are, of course, impossible in general eczema of adults, but not in that of infants. Dr. Unna describes an especially important effect following the application of resorcin, viz., a swelling of the epidermis, by which all painful fissures are healed in a single night. In order to insure healing, he advises that the skin should be anointed after the removal of the bandage, and that washing with soap should be avoided. A few people suffer from a resorcin idiosyncrasy; this is, however, very rare, as he has only met with it ten times in five years' observation, during which time he has seen 2,000 cases. He remarks that his treatment is not adapted to those cases of long-existing eczema in which strongly infiltrated of thickly-indurated patches occur.—*Lancet.*

IODOFORM GAUZE IN POST-PARTUM HÆMORRHAGE.

Dr. O. Piering, assistant in Prof. Schauta's obstetric clinic in Prague, has published his experience in the employment of Dührssen's plan of plugging the uterus with iodoform gauze for post-partum hæmorrhage due to an atonic condition of the organ. Dührssen recommends that, when post-partum hæmorrhage comes on, the bladder should be emptied, and forcible friction and intra-uterine irrigation of hot or cold water, along with ergotinin hypodermic injections employed; that if the hæmorrhage still continues, the cavity of the uterus should be filled with iodoform gauze, the irritation produced by this setting up active and permanent contraction. The method has, according to Dührssen, the advantages of great certainty, complete harmlessness, and facility in its performance. Olshausen, Veit, and Tehling, however, say that the contraction set up is not always permanent, and that the method is not so free from danger as Dührssen believes. In consequence of these conflicting views, Dr. Piering resolved to give the method a trial, and he details several cases in which he employed it with complete success. In no case was any harm done by it. He advises that resort to the plug should not be too long delayed, and he prophesies an important future for the plug of iodoform gauze in post-partum hæmorrhage.—*Lancet.*

COOLING OF THE BODY BY SPRAY.

Dr. S. Placzek, following up some laboratory experiments by Preyer and Flashaar, on the effect of spraying a considerable part of the body surface of animals with cold water, has applied the spray for the purpose of reducing febrile temperatures in human beings. In the case of a man suffering from phthisis, whose temperature was high, he found that by spraying about a pint of water at between 60° and 70° F. over his body the temperature fell to normal, and continued so for several hours. Again, a similar method was satisfactorily applied in the case of a girl with diphtheria. In the healthy human subject the spray lowered the temperature nearly 2°, and in animals which had been put into a condition of septic pyrexia by injections of bacteria the temperature was reduced to normal by the spray. By keeping healthy guinea-pigs and rabbits some hours under spray and using from half a pint to a pint of water at the temperature of the room—44° to 62°—the temperature of the animals fell several degrees.—*Lancet.*

SOCIETY PROCEEDINGS.

The American Academy of Medicine.

Thirteenth Annual Meeting, held at the Leland Hotel, Chicago, on Wednesday and Thursday, November 13 and 14, 1889.

DR. LEARTUS CONNOR, OF DETROIT, IN THE CHAIR.

The officers for the year 1888–9 were the following:

President—Dr. Leartus Connor, Detroit, Mich. Vice-Presidents—Drs. Peter D. Keyser, Philadelphia, Pa.; L. Duncan Bulkley, New York, N. Y.; Theophilus Parvin, Philadelphia, Pa.; George J. Fisher, Sing Sing, N. Y. Secretary and Treasurer—Dr. Richard J. Dunglison, Philadelphia, Pa. Assistant Secretary—Dr. Chas. McIntire, Jr., Easton, Pa. Council—Drs. Traill Green, Easton, Pa.; Lewis H. Steiner, Baltimore, Md.; Henry O. Marcy, Boston, Mass.; Benjamin Lee, Philadelphia, Pa.; Albert L. Gihon, U. S. Navy; R. S. Sutton, Pittsburgh, Pa.; Lewis P. Bush, Wilmington, Del.; Frederic H. Gerrish, Portland, Me.; Leartus Connor, Detroit, Mich.; Peter D. Keyser, Philadelphia, Pa.; L. Duncan Bulkley, New York, N. Y.; Theophilus Parvin, Philadelphia, Pa.; George J. Fisher, Sing Sing, N. Y.; Richard J. Dunglison, Philadelphia, Pa.; Charles McIntire, Jr., Easton, Pa.; Hosmer A. Johnson, Chicago, Ill.; Gershom H. Hill, Independence, Ia.; Justin E. Emerson, Detroit, Mich.

FIRST DAY.

After the reading of the minutes of the last annual meeting, and a verbal report of the Council, the Academy proceeded to elect a large number of Fellows, each applicant for admission having been endorsed by a Fellow of the Academy.

THE PRESIDENT appointed the following Committee on Nominations: Drs. Traill Green, G. H. Hill, and Alonzo Garcelon.

The following Reports were read from standing committees: Report of Committee on the Requirements for Preliminary Education in the various Medical Colleges of the United States and Canada. By Dr. J. E. Emerson, Chairman.

Report on Laws Regulating the Practice of Medicine. By Dr. Richard J. Dunglison, Secretary of the Academy.

This comprehensive report was chiefly the outcome of an extensive correspondence with gentlemen in the various States and Territories of the United States and in Canada who were directly interested in the subject, officially or otherwise, and whose names had been suggested to him by the distinguished Secretary of the Illinois State Board of Health. It gave, therefore, a very accurate and interesting view of the working of such laws in the regions indicated. It alluded to the action of the Committee on Uniform Medical Legislation in the United States; of the American Medical Association at its late meeting at Newport; to the recent legislation in New York State, by which a certain standard of preliminary education was required of all medical students; and to the detailed operations of the law in about twenty of the States of this country.

In Kentucky, the law was generally observed, as it is in North Carolina. In Florida the law has the great defect of requiring every applicant to produce a diploma from a recognized medical college, and all those previously in practice one from a medical college *recognized by the American Medical Association;* but the latter has no relation to medical colleges, its membership being made up from medical societies only. The Virginia law is effectively carried out by the State Board of Medical Examiners, but the work of the Board has not caused the colleges to turn out any better graduates. The law is operative in Indiana; Maine is without any law, the one passed last year having been vetoed by the Governor; and the effect of the law is salutary in Missouri. The practical effect of the law has not been satisfactory to the State Board until recently the latter was strengthened by a decision of the Supreme Court.

In South Carolina the law has been slightly amended to increase its efficiency. In Wisconsin there is really no law which restricts the right to practice, although only graduates in medicine or those connected with organized medical societies can testify in court or collect fees by law. The law is efficient in Minnesota, and it is found that the applicants improve in general ability, intelligence and knowledge of medicine with each session of the Board. The law in that State is considered a great protection to the community, and has been strengthened by decisions of the courts. Texas is making strong efforts to secure a good law. The Tennessee law is not perfect, but is a decided improvement on the nothing which existed before it was passed. There is a good law in Maryland, based on the Illinois Act, but it is not practically enforced. The West Virginia law is working well, and that of Alabama is regarded by the profession in that State as "almost ideally perfect." In Arkansas there are numerous County Boards, but these, being appointed by County Judges, are often totally incapacitated for the duty.

In regard to the registration law in force in Pennsylvania, a correspondent expresses the view that it is the worst one of all, as the system of protection is applied for the benefit of the medical colleges, these being made the executors of the law, the Faculty of one medical college being made the absolute judge, without appeal, of the qualifications of the graduates of a competing medical college. He thinks unrestricted freedom is better for the public and the profession than an unfair law unjustly administered.

Reports were made from the following special committees:

Committee on Papers for Annual Meeting, Dr. N. S. Davis, Jr., Chairman.

Committee on Eligible Fellows, Dr. S. J. Jones, Chairman.

Committee on Publication of Transactions, Dr. A. L. Gihon, Chairman.

Committee on Preparation of a Catalogue of the Fellows, Dr. R. J. Dunglison, Secretary of the Academy.

Committee on Amendments to the Constitution, Dr. B. Lee, Chairman.

The following papers were then read:

The Institutes of Medicine; the Necessity of their being Taught in our Schools, by Dr. Cheston Morris, Philadelphia.

Gymnastic Medicine, by Dr. E. Hitchcock, Jr., Ithaca, N. Y. This paper was an interesting sketch of the influence of gymnastic treatment of disease, in place of that of mere drugs, and the writer's experience as Professor in Cornell University was cited in advocacy of the sound practical views entertained by him on the subject.

The Academy then adjourned until 3 o'clock P.M., when, Dr. Traill Green, being called to the Chair, the PRESIDENT, DR. CONNOR, delivered his Address on

THE AMERICAN ACADEMY OF MEDICINE, ITS SIGNS OF PROMISE AND OBSTACLES, ITS FIELD OF LABOR, AND SOME SUGGESTIONS LOOKING TO AN INCREASE OF ITS EFFICIENCY.

The paper is one that commends itself to every friend of liberal education and deserves what it will doubtless obtain—the general attention of the medical profession. Dr. Connor alluded to the fact that this was the first meeting of the Academy in the West. The idea that the Academy was founded upon a new idea born of an aristocratic modern notion was combated, the facts being that Hippocrates urged that the preliminary training of medical men be made as broad and deep as possible, while by precept and example the same idea has been maintained by all the famous medical men from Hippocrates to Alonzo Clark. The effects of such changes as are desired by the Academy are shown by what was accomplished by the Harvard Medical School when in 1870 it raised its standard of preliminary requirements; previous to this time the medical students were inferior to those of the other departments—now they are indistinguishable. It is objected by some that broad education does not pay. To this it is replied that the pure tradesman has no place in the temple of medicine; that the highest honors and emoluments during all time have come to the physicians who have sought to uplift the profession. The Academy is pleased to observe that the effort made by the College of Physicians and Surgeons in New York and by other colleges to advance the requirements of preliminary education have yielded most satisfactory results; that a recent enactment by the State of New York shows that the principles advocated by the Academy have been adopted by a great commonwealth; that the enemies of the Illinois State Board of Health have failed to accomplish its ruin; that most encouraging results have been obtained by the efforts of the Minnesota State Board of Examiners, as evidenced by a recent enactment of the Minnesota Legislature; that similar progress has been made in Montana, Virginia and North Carolina; that earnest efforts in the direction of educational advancement are being made by the American Medical Association and by pharmaceutical societies.

Among the obstacles opposed to the adoption of the Academy's designs there is one indicated by the fact that the proportion of literary college students to the entire population has notably decreased. The medical colleges themselves oppose efforts to advance medical education. The professors of medical colleges are often inefficiently educated and hence do not encourage liberality of education in their pupils. The lukewarmness of many members of the Academy is opposed to the effective prosecution of its work. The greatest of all the obstacles to be encountered lies in the extensive general ignorance in the profession itself.

This part of the paper bristled with important and even startling facts illustrated by the citation of many important statistical figures. Among these may be noted the fact that among 9,306 medical students only 811 were possessed of literary degrees, of which number one-third emanated from institutions not recognized by this Academy.

Contrasted with veterinary colleges the comparison remains greatly in favor of the latter. The number of A.B's. in the medical profession is diminishing. On the other hand, the proportion of A.B's. in the variouss chools of medical practice presents a pleasanter picture, there being 94 per cent. among regulars and 6 per cent. among the various classes of irregular practitioners.

After a survey of the field of useful activity presented to the Academy, with various recommendations of plans for adoption, the paper closed with the necrological reports for the year. The recommendations were referred to the Council, with the thanks of the Academy for his able address.

The following papers were then read and referred to the Council:

The Need and Position and Object of the American Academy of Medicine, by Dr. Traill Green, of Easton, Pa., was read by title.

DR. S. J. JONES of Chicago, then read a paper entitled

WHAT IS THE PROPER FUNCTION OF AMERICAN MEDICAL COLLEGES OF THE PRESENT TIME?

He gave a very entertaining sketch of the history of medicine, and particularly medical education, in this country from the earliest times. In Europe, he said, the requirements and attainments of medical men vary from time to time in the various countries. In this country our political characteristics are such as to acquire certain peculiar features in our medical institutions. For thirteen years the Academy has labored to increase the standard of preliminary education. It also aims to assist the student in the progress of his educational studies. The apprentice system in medicine, as well as its "office student" outgrowth, has been abandoned. The student does best to begin his medical education at the college doors, without seeking to prepare for his course by office reading with a so-called preceptor. Since the Academy first began its labors many changes have been inaugurated by the medical schools in order to suit themselves and the requirements and spirit of the times. The more advanced portion of the medical course is the one which has manifested the most improvement. The writer believes that the function of medical schools should be restricted to teaching, leaving the matter of examining and licensing to the various States, because of the variations in the requirements of medical practice in the different sections of the country. The mixed Board of Health, as seen in Illinois, has accomplished much good work.

There is nothing new in the idea of separating teaching from licensing in this country, for such a separation was seen even in the last century; while in New York, in 1839, the State Medical Society resolved that such separation was advisable. The question is asked, "Is such a separation practicable?" There were formerly objections to such a procedure, but these objections are no longer valid. The National Government does not assume the right to do this, but the power is conceded to the several States.

In the early record of American medical history it is interesting to observe that Drs. Rush and Drake were both bound out at a very early age as medical apprentices. This apprentice system ended at about 1810. The history of American medical colleges was traced from the foundation of the first in 1750 down to the present day.

The trouble with our modern colleges is that their facilities are too few and their numbers too great. It would be unfair to restrain a college from teaching because its facilities were not of the best, and yet at the same time a college diploma is an uncertain quantity and often very deceptive. As matters now are, in most States the authorities are obliged to treat all diplomas as though they knew them to be of a high order of value.

DR. HENRY M. LYMAN, of Chicago, then addressed the meeting on the subject of

INSTRUCTION BY RECITATION.

He said that during the past eighteen years he had experimented in the methods of instructing medical students in the several departments of chemistry, physiology, nervous and mental diseases, and the practice of medicine. As the result of his experience, he believed it desirable to have recitation assignments of lessons made. Regarding the difficulties in the way of the practical application of this method of instruction, he found that the range of usefulness of this method is not so wide as in literary colleges. The topics best adapted to this form of instruction are the elementary branches, anatomy, physiology, chemistry and materia medica. Recitations should be combined with all necessary didactic exhibitions. In the advanced branches the conditions are different; here the student can still get the theories from the books, but it is his desire to learn the views of his various teachers. Recitation, however, may still be used to some extent even in the advanced branches. Tutors and tutorships should be established so that classes may be made small.

There are several difficulties in the way of the recitative method; first, there is the lack of suitable text-books. Some are too long, some too short, some not well balanced. There is a splendid field for writers in supplying this deficiency in medical literature. The second difficulty is to get well-qualified men to teach by this method. It is not easy to obtain tutors who are willing to work on the necessarily small salaries which have to be paid. It is not uncommon for students to request lectures instead of recitations, but at the end of a fair trial of the recitative method the students are generally well satisfied. One of the disadvantages in lecturing to large classes is that it is a very difficult matter to fix the attention of the students, who are apt to be distracted by the least break in the continuity of a lecture.

DR. J. C. MORRIS, of Philadelphia, said that the plan advocated by Dr. Lyman had been in operation in Philadelphia ever since he could remember—for the quiz classes are recitative classes. By this method he, as a quiz master, had taught chemistry, materia medica, physiology, and the practice of medicine. The better students all attended these classes, the method of teaching being something like that employed by the *privat docenten* of Germany and the tutors of Edinburg. He said that the apprentice system in medicine gave way to the preceptor system, in which the teacher is expected to give instruction by the method of recitation. Teaching of this kind is highly necessary as a means of eliminating from the student's mind errors obtained from a failure to properly comprehend lectures, and as a means

also of increasing his information. In his experience as quiz master the examinations were more rigid than the general examinations, and very few students who were recommended by the quiz masters failed in their examinations. He would go farther than Dr. Lyman, and apply the method to all the branches of medical instruction.

Dr. S. J. Jones said that the only difference concerned the method employed. The question is whether this form of instruction shall be imparted by the college itself or whether the matter be collateral and voluntary on the part of the student. As regards the year of preliminary instruction under a preceptor, it may be said to be of little avail to the student, who will generally accomplish quite as much by beginning his education at the college doors. The practical driller in college is as valuable as the Professor himself.

Dr. P. J. Farnworth, of Clinton, Iowa, said that American students were adapted to this method of instruction. As lectures are arranged there is no time left for the students to read. The recitation method is in accord with the genius of our general plan of education.

Dr. G. H. Hill, of Independence, Iowa, said that recitations would not be so necessary if students were A. B's. There are few students who know how to take notes.

Dr. H. A. Johnson, of Chicago, said that the teacher comes too little into personal contact with the pupil. The recitation method is very helpful. In his teaching he has always made this his endeavor. Class quizzing is only useful when the attention of all is held. It is easier for the medical teacher to cram for a lecturer and talk for an hour than to hold recitations, for in this he has the floor and the students cannot talk back.

Dr. Lester Curtis, of Chicago, described the most interesting lecture he ever heard. It was a kind of clinical quiz in which the patient's history was read, after which the pupil was given time for examining the case and prepare for his quiz, the teacher's function being mainly to keep him on the track. The interest manifested on the part of the class was almost dramatic in its intensity. Didactics have largely been abandoned on the continent.

Dr. E. Wing, of Chicago, found the theory of Colleges wrong, the fact being that students are *not* equipped with mental discipline. The quiz master and demonstrator knows best the student's condition and needs. Didactics are largely failures. In New York the lecture-rooms are deserted for the quiz-room.

Dr. J. N. Hyde, of Chicago, found that the average medical student is taught according to better methods in this country than abroad. He found fault with the literary colleges for making a good literary education a luxury for the wealthy, whereby the medical student is largely debarred from a good foundation for his medical studies. This was not the case some years ago.

Dr. A. Garcelon, of Lewiston, Maine, dwell on the importance of preliminary examinations. As for the recitation method of instruction this was in vogue where he began his medical studies fifty-three years ago.

Dr. J. H. Rauch, of Springfield, Ill., read a paper on

THE WORK OF THE ILLINOIS ARMY MEDICAL EXAMINING BOARD.

He said the Board was granted large discretionary powers and received the cordial coöperation of Gov. Yates. The Board's examinations were stringent ones, but they often found that men without diplomas were better qualified than men provided with them. The paper excited many interesting reminiscences.

Dr. Green, of Easton, Pa., recited similar experiences to those of Dr. Rauch in his own Army experience. In examining homœopathists he generally found it useful to quiz on materia medica.

Dr. S. J. Jones related some amusing experiences connected with his duties as examiner for the Navy.

Dr. H. A. Johnson said that during his experience as an Army Examiner it often happened that his own pupils appeared for examination, when he sometimes found to his surprise that they had forgotten the points upon which he had placed most emphasis as a teacher. He explained this on the hypothesis that these were points of information that the practitioner had found little use for, and accordingly he was led to modify the character of his instructon. The late Dr. Flint had told him the longer he lived the fewer things he taught, but these things he made hooks upon which to hang important facts. The Army field was the best school of medicine ever afforded to the physicians of this country. It was a constant clinic.

SECOND DAY.

The Academy reconvened on Thursday morning at 10 o'clock.

Dr. Rauch, on invitation of the President, made some remarks on *The Advance of the Standard of the Medical Degree, as shown by the Statistics of the Illinois State Board of Health.*

The election of Fellows was then resumed, and nearly 100 in all, who had been approved by the Council, were elected.

The Secretary reported the action of the Council upon the report presented by the Committee on Amendments to the Constitution. Several of these amendments were reported negatively by the Council, in accordance with such report, and the following amendments, approved by the Council, were adopted by the Academy:

Paragraph 1, Section II, Article III, to read as follows: "The degree of Bachelor of Arts or of Master of Arts, after a systematic course of

study, preparatory and collegiate; but when a candidate has not received either of these degrees in course, other evidence of a preparatory liberal education which shall be considered as equivalent to the same by the Council (hereinafter to be provided for), may be accepted in lieu of a degree by the Academy."

Paragraph 3, Section II, Article III, to read as follows: "When a candidate is an alumnus of a foreign institution or institutions not granting the degree of Bachelor of Arts or Master of Arts, or of Doctor of Medicine, a certificate or certificates, or a license, which shall be considered as equivalent by the Council, may be accepted in lieu thereof by the Academy."

Article X, to read as follows: "A Latin certificate of fellowship, bearing the seal of the Academy and the signatures of the officers, shall be issued to any Fellow, on payment of its cost."

In consequence of the adverse report of Council, the other amendments were laid upon the table.

At the recommendation of Council, the following gentlemen were elected Honorary Members: Dr. David Jordan, President of the Illinois State University, Bloomington, and Sir James A. Grant, M.D., of Ottawa, Canada.

Several other gentlemen were elected Fellows of the Academy, having become eligible by reason of the adoption of the first-mentioned Amendment.

On motion, the recommendation of Council that the Academy should hold its next annual meeting November 12 and 13, 1890, in Philadelphia, was adopted.

The Committee on Publication of Transactions was continued, with approval of Council, under the same instructions as those given them at last annual meeting.

The President's Address was referred to the same committee.

On recommendation of Council, the other Special Committees were continued, the appointment of gentlemen composing them to be made by the incoming President.

The Treasurer's report was presented, and referred to a Committee of Audit, Drs. Hill, Heath and Garcelon, who subsequently reported the account as correct.

The Committee on Nominations reported that they recommended the following officers for the ensuing year: President, Dr. Samuel J. Jones, of Chicago, Ill.; Vice-Presidents, Drs. Justin E. Emerson, Detroit, Mich., Edward Hitchcock, Jr., Cornell University, Ithica, N. Y., J. Chester Morris, Philadelphia, Pa., Alonzo Garcelon, Lewiston, Me.; Secretary and Treasurer, Dr. Richard J. Dunglison, Philadelphia, Pa.; Assistant Secretary, Dr. Chas. McIntire, Jr., Easton, Pa.

After the election of additional Fellows, the reading of papers was resumed.

Dr. Gershom H. Hill, of Independence, Iowa, read a paper on *The Moral Treatment of the Insane*, which was referred to the Council.

Dr. F. C. Heath, U. S. Marine-Hospital Service, read a paper on *Medical Harmony*, and Dr. N. S. Davis, Jr., one on *The Physiological Action of the Typhoid Fever Poison*, both of which were referred to the Council.

Other papers, the authors of which were not in attendance, were read by title, and referred to the Council: *The Need and Position and Object of the American Academy of Medicine*, by Dr. Traill Green, Easton, Pa.; *Aim and Scope of the American Academy of Medicine*, by Dr. Edward Jackson; *The Mission of the Academy*, by Dr. R. Lowry Sibbet, Carlisle, Pa.; *Brief Sketch of the late William Elmer*, late a Vice-President of the Academy, with appended resolution, by Dr. Lewis P. Bush, Wilmington, Del.

The following preamble and resolution, offered by Dr. Traill Green, were adopted:

The report of the good work accomplished by the Illinois State Board of Health having gone beyond this State throughout the United States, and received with approval, the American Academy of Medicine, in session in Chicago, congratulate the citizens of Illinois and the profession on the good which the Board has wrought by their action in securing an advance of preparation of those who minister to the people in their sickness.

Therefore resolved, That we approve the labors of the Board, whose action has been read by so many of our members in distant parts of our land; that the Fellows of this Academy testify to the influence of the Illinois State Board in advancing a better preliminary education for intending medical students, and a more extended course in the medical schools; and that they present to the Board their thanks for the help which the profession has received from their action, and wish for them continued success in their work and the support of their fellow citizens.

Dr. Jordan, President of the Illinois State University, then, by invitation, addressed the Academy on the changes that had taken place in the under-graduate courses.

The newly-elected President, Dr. S. J. Jones, was then inducted in the chair by Drs. Traill Green and H. A. Johnson, appointed by the President.

Thanks were tendered to the retiring President, Dr. Connor, for the able and faithful discharge of his duties; also to the proprietor of the Leland Hotel for courtesies extended.

The time of appointment of committees by the new President was, on motion, extended to be at the convenience of the latter.

The President appointed Drs. H. A. Johnson and G. H. Hill additional members of the Council for the ensuing year, and Drs. Emerson, Heath and McIntire the Committee on Eligible Fellows.

The Academy then adjourned.

THE grand duke Nicholas of Russia, who is suffering from cancer, has undergone a surgical operation for the introduction of a canula into the throat.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Academy of Medicine—A Plea for the Practical Utilization of Hydro-therapy.

At the last regular meeting of the Academy of Medicine Dr. S. Baruch, who has for a number of years devoted much attention to the subject, read a paper entitled, "A Plea for the Practical Utilization of Hydro-therapy." He stated that this plea would be based upon historical, physiological and clinical grounds, and that it was his purpose to divorce the remedial use of water from its empirical union with hydropathy by urging its simplified employment by the general practitioner in his everyday rounds.

Having referred to the vast literature that had now accumulated on the subject, he gave a historical sketch of hydro-therapeutics from the time of Hippocrates, and then quoted from the writings of such modern clinical teachers as Niemeyer, Ziemssen, Dujardin-Beaumetz, Peter, F. A. Hoffmann and Semmola. The opinions of the most judicious, philosophical and successful physicians of past ages he went on to say, had been sustained by the judgment of the world's most enlightened era, and hydro-therapy had maintained its position not simply on clinical grounds, but was to-day more firmly established than ever, because it was based upon well-ascertained and exact physiological facts, the application of which formed the most brilliant chapters of clinical medicine. The works of Winternitz, Naumann, Chapman, Delmas, Bottey, Liebermeister and others teemed with experiments on animals and man, which must prove to the unbiased observer that by means of the thermic and mechanical effects of water prompt and decided modification may be impressed on all the functions of the body.

Having dwelt for some time on the physiological effects produced by water, as recorded by various observers, he quoted as follows from Dr. M. P. Jacobi: "Sleepiness during the pack nearly always occurs in successful cases, and we have found the greatest amount of benefit to accrue when the patient was able to sleep for half an hour after the completion of the pack and massage. If, during the first period of the pack, we may assume, for reasons already stated, that blood circulates in increased volume and under increased pressure through the nerve centres, and that, in consequence, the acid fatigue products, which had been maintaining a permanent excitement of nerve elements, could be completely removed, the immediately subsequent diminution of blood supply effected during the second part of the pack cannot fail to be a great advantage, for it lowers the functional activity of the nerve centres, that had been unduly prolonged, and brings them, therefore, into the condition which is a necessary preliminary to the beginning of nutritive assimilation. The diminution of the blood supply is not sufficient to interfere with this latter process, for it is not below the point which exists in sleep, the physiological period for nutritive assimilation in nervo-muscular tissues. Accepting Ranke's law for these tissues, that they are only nourished when fatigued, *i. e.*, relaxed, we may see, further, in the muscular relaxation induced by the warm moisture of the pack, a condition most favorable for the nutrition of muscles."

In entering upon the discussion of clinical evidence, Dr. Baruch remarked that, unfortunately, experience had been so often involved upon the subject by empirics that the profession had looked askance upon this argument. He said he agreed with the latest German author on therapeutics, F. A. Hoffmann, who states that he does not deal with the disease, but with the sick man, and who divides therapeutic methods into the direct, which acts by removing the cause, and the indirect, which by influencing the circulation and nutrition of one or more organs, or the general tissue changes, serves to remove the disease or make it recede. He would add a third method, viz: that by which we may so impress the various functions of the body (chiefly through the innervation which governs them all) as to enhance the resisting power of the patient, and thus enable him to escape the dangers which are known to be lethal. All these methods, he said he proposed to demonstrate, might be sought in the proper application of hydro-therapy, although he wished to be distinctly understood as not claiming this as an universal remedy, to the exclusion of drugs. The position in which he would place it was that of a valuable, indeed an indispensable, auxiliary to other treatment.

As he conceived it, hydro-therapy might be defined as the utilization of water at any temperature and in any form, from ice to vapor, internally or externally, for the treatment of disease. By such a definition it was emancipated from hydropathy, or the cold water cure, and placed clinically in the front rank of therapeutic measures. The modern discovery of the microbic origin of many diseases would, if verified by clinical experience, present a large field for therapeutic labor in this direction. Thus far less had been accomplished in this field than could be wished for; but in the gastric and intestinal diseases of infancy we seemed to be on the threshold of its fulfilment. Clinical study had demonstrated that many of these affections were due to toxic products derived from the microörganisms which had found their way into the alimentary canal, chiefly through milk food in summer; and to remove these, and reinstate the gastro-intestinal func-

tions, water had been used with great success. Intestinal irrigation carefully and thoroughly done with a large Nélaton catheter, with the patient on the abdomen, and by means of a fountain syringe holding not less than a quart of water, had proved the most efficient method of treating several types of summer diarrhœa, even after they had assumed a threatening phase.

Another hydriatic method, which acted by removing the cause of disturbance, was the sipping of hot water an hour before meals in dyspepsia. The hot water craze, which had now taken a firm hold upon the lay public, was but the legitimate outcome of a valuable therapeutic application of water whose simplicity commended it at once to the judgment of the intelligent physician. Brought into prominence by Dr. Saulsbury, who committed the error, so common among enthusiasts, of regarding his remedy as a panacea, it had become adopted by the profession as a most valuable agent in many gastric troubles, removing the products of fermentation, cleansing the mucous membrane, restoring tone and vigor to the gastric lining, and enabling the natural forces to come into play.

Having alluded to the successful management of ileus, as attested by Kussmaul and Senator, by irrigation of the stomach with large quantities of water, he spoke of the second method of treatment mentioned, viz: that which acts by affecting the nutrition and tissue changes. Among the affections amenable to this were neurasthenia and other nervous troubles, gout, rheumatism, obesity, scrofula, anæmia and chlorosis. For practical purposes in hydriatic management, he said, he divided neurasthenia into two types, the erethic and the true asthenic. The former, which was characterized by an irritability of the nerve forces, was most appropriately treated by soothing measures, such as cool ablution or prolonged wet packs, followed by the half bath at 65° to 70°, once or twice daily. The asthenic form, on the contrary, required the stimulus of the powerful reaction produced by the impingement of a mass of cold water for a brief period, and the effect was greatly enhanced by general faradization. Between these two extremes there were intermediate forms, to which the flexible procedures of hydrotherapy admirably adapted themselves.

Hysteria also presented a wide field for hydrotherapy. In his personal experience, he said, so many cases had yielded to the tonic influence of various hydriatic measures that he was firmly convinced of the extreme ability of this method of treatment. Here, too, he thought it was important to differentiate the types of the malady and adapt our procedures to each one with precision. In his private and hospital practice he now employed no other remedy in hysteria, and at the Montefiore Home for Chronic Invalids, where he was in attendance, three cases had recently been discharged cured which had been admitted solely because they were believed to be entirely incurable. In chorea hydro-therapy had been found of the greatest possible service, although in this affection it was used as an adjuvant to other treatment, and not as the exclusive therapeutic agent.

In various forms of neuralgia also it had won many triumphs, and in Dr. Baruch's hands sciatica has yielded more readily than other varieties. In the acute form the patient is wrapped in a dry woolen blanket and, after lifting the blanket, pieces of old blanketing, doubled and thoroughly wrung out of boiling water by means of a wringer, are closely applied to the affected limb over the region of the nerve. These are rapidly changed until the parts become thoroughly congested and the patient is bathed in perspiration, and this treatment is continued for about half an hour. The blanket is then removed successively from various parts of the body, beginning with the affected limb, and these are rapidly washed with water at 65° and dried. In chronic cases, in which the general health is impaired, the general tonic treatment by cold ablutions, douches or plunges is indicated.

In functional anæmia the tonic effect of hydrotherapy, he said, was especially pronounced, and for many years he had been in the habit of prescribing cold ablutions while the patient was still warm from the bed, as a prominent element in the treatment. In the early summer months, when the water was of a temperature of from 70° to 75° and the air not much warmer, the shock would be slight. Hence it was necessary to add ice to the water, or several basinfuls might be precipitated over the shoulders and body from a height, in order to compensate, by the mechanical effect, for the absence of temperature difference. In winter his usual prescription was to stand in sufficient warm water to cover the feet, and, after turning the cold water on, to catch it up with the hand or a small pan and dash it over successive parts of the body, after which rapid drying and friction should follow. After the patient had become accustomed to the cold water he advised the plunge into a tub three-quarters full of water of not less than 55° nor more than 65°. Its duration, however, should not be longer than was required to wet the entire body. In diathetic diseases, such as gout and rheumatism, in which anæmia was present as a manifestation of deficient nutrition, excellent results might also be accomplished by the skilful adaptation of cold water to the case.

Having spoken in detail of the good effects of hydro-therapy in phthisis, chronic constipation and chronic gout and rheumatism, and given illustrative cases, he passed on to its use in febrile diseases, in which the third method of treatment referred to, viz: arming the patient for the battle

with disease, was illustrated. Statistics which were unimpeachable, he said, had demonstrated that the mortality from typhoid fever had been reduced from 25 per cent. to 2 per cent. by the systematic adoption of the Brandt method of cold bathing. In this connection, he said, he desired to reiterate the necessity of implicitly following an exact technique in hydro-therapy. Wrapping a typhoid fever patient in a sheet and sprinkling him with ice water, or sponging with cold water, could not be regarded as at all taking the place of cold bathing. The bath should be adapted to each case, and the fact should never be lost sight of that its object was not to reduce temperature, but to refresh the nervous system and enable the body to withstand the lethal influences at work in the regular process of the disease.

It ought perhaps to have been mentioned that three patients with phthisis treated by hydrotherapy, in addition to other remedial measures, at the Montefiore Home gained respectively 10, 11 and 17 pounds, while the symptoms of the disease became greatly ameliorated or disappeared altogether.

In the discussion which followed the paper Dr. George L. Peabody said that it was a matter of surprise to him that it should at the present time be necessary for Dr. Baruch to urge upon the profession the advisability of making use of cold baths in the febrile diseases. It seemed, however, that the old prejudice against this procedure had been revived and amplified, it being regarded by many as dangerous to suddenly alter the temperature of the medium with which the patient was surrounded. But so far from this being the case, it was a fact that it was almost impossible to give a patient cold who had a temperature much above the normal. We certainly ought not to be satisfied with the results at present obtained in typhoid fever. The proportion of deaths was from 20 to 30 per cent., and this was much higher than in many of the European hospitals, where cold bathing was regularly employed. Brandt's latest statistics of typhus and typhoid embraced nearly 6,000 well-authenticated cases in which his method was systematically practiced, and the percentage of mortality was only 3.9. Why was not this method generally adopted here? Because, as Prof. Horatio Wood had said, the medical profession had not yet risen above the existing prejudice against it. Another reason was because the method was troublesome and expensive, requiring a portable bath-tub and the services of two attendants. There was no question that the full bath, at a temperature of from 65° to 70°—68° being the best for the average class of cases—was much more beneficial than any other application of water; the bath being repeated sufficiently often to keep the body temperature at or below 102°.

Dr. A. A. Smith said that when he recently succeeded Dr. Flint in the medical service of Bellevue Hospital there were four cases of typhoid in the wards which had been treated by the cold bath method with perfect success, and he had carried out the treatment as long as it was required. Since then, however, five cases had been admitted none of which seemed to him to justify the adoption of this procedure; and he thought, therefore, that a very large number of cases were required to base any results upon.

In answer to a question by Dr. M. P. Jacobi, as to whether he would employ the baths in a malignant case of typhoid with low temperature, Dr. Baruch said that he certainly would if the temperature was as high as 102°, although in a somewhat modified form. He would place a patient of this kind in a tub of warm water, and then employ short affusions of cold water over the shoulders.

P. B. P.

BOOK REVIEWS.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., Physician to Charing Cross Hospital, Etc. Sixth American from the Seventh English Edition. Revised and Enlarged by Stanley Boyd, M.B. Lond., F.R.S. Eng.

The fact that in so short a period of time this work has run through seven editions in England, and six editions in America is ample evidence of its value and of its popularity. The practitioner and the student alike have found in it the latest and most reliable expressions of pathological research. While the former editions are too well known to require minute description, it should be stated with reference to this last, that it has been so far re-written, as to include the latest accepted views and the latest investigations in the several departments of pathological study. Thus the chapters on Inflammation, Fatty Degeneration, and Vegetable Parasites, have been essentially recast, and will, we think, be found accurate up to date.

The Genesis of Cells; the Etiology of Disease; the Arrest of Nutrition; the Various Forms of Degeneration; the whole subject of Tumors; Carcinomata; the Blood; Inflammation; Fevers and Infective Granulomata; Scrofula; Leprosy; Syphilis; Glanders; the Inflammation of Special Tissues; Septicæmia; Pyæmia and the Vegetable Parasites are the subjects of which it treats in a lucid and masterly manner.

The work containing over five hundred pages is well illustrated, and the publishers, Messrs Lea Brothers and Co., have produced it in the exceptionally fine style and finish characteristic of their publications. It contains a large amount of valuable instruction, such as every physician

needs, and it should have its place in every medical library.

For sale by A. C. McClurg & Co., 117, 119 Wabash Ave., Chicago. Price $2.75.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, including Histology and Microscopic Anatomy, with special reference to the Requirements of Practical Medicine. By DR. L. LANDOIS, Professor University of Greifswald. Third American, Translated from the Sixth German Edition, with Additions by WM. STIRLING, M.D., Sc.D., Professor of Physiology and Histology in Owens College, etc.

This great work of Dr. Landois is well known to the medical profession. Its successive editors in Europe and in this country have been rapidly exhausted, and special credit is due to Messrs. P. Blakiston, Son and Co., for the admirable manner in which they have now brought out the third American edition. It is idle to attempt in this brief review, any elaborate description of this valuable treatise. In its treatment of its various subjects, the work is exhaustive, and yet never tedious.

The approved methods of physiological investigation are so clearly expressed, and often so exquisitely illustrated that the student is able to follow the master through each and every demonstration.

Much as we have esteemed our own American Text-Books, it is with no disparagement to any that we assign for this work the foremost place in its methods of dealing with human physiology, histology and microscopical anatomy.

The work is published in the best style of the publishers, and its profuse illustrations are a credit to the engraver's art. It will be deservedly popular, and will render a valuable service to the American profession.

MISCELLANY.

MEDICO-CHIRURGICAL FACULTY OF MARYLAND.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Hagerstown on November 12 and 13. The address of welcome was delivered by Dr. A. S. Mason, of Hagerstown, followed by remarks by the President, Dr. A. Friedenwald, of Baltimore. Papers were read by Drs. J. J. Chisolm, Robert W. Johnson, Edwin Michael, George H. Rohé, William B. Canfield, Joseph T. Smith, Randolph Winslow, T. A. Ashby, S. T. Earle, William Lee, J. N. Mackenzie, and George J. Preston.

LETTERS RECEIVED.

Dr. L. D. Gorgas, Chicago; Dr. F. E. Schenk, Harveyville, Kan.; Dr. L. Reynolds, Horton, Kan.; Dubuque Water Co., Dubuque, Ia.; Dr. Wm. S. Stewart, Philadelphia; Dr. W. P. Northrup, New York; Dr. J. T. McShane, Carmel, Ind.; I. Haldenstein, New York; Dr. R. C. Ward, Northfield, Mass.; Peter D. Pinke, New York; The Cosmopolitan, New York; Dr. A. N. Bell, Brooklyn, N. Y.; Dr. C. O. Owen, Eola, La.; A. A. Marks, New York; Dr. E. Elmer Keeler, Syracuse, N. Y.; W. H. Schieffelin & Co., New York; S. H. Parvin's Sons, Cincinnati, O.; Armour & Co., Chicago; Dr. W. C. Curtis, Farmington, Minn.; Dr. G. E. Frothingham, Detroit, Mich.; Dr. E. F. Brush, Mt. Vernon, N. Y.; The Stewart Ceramic Co., New York; Dr. H. L. Getz, Marshalltown, Ia.; Dr. W. H. Merry, Lynn, Mass.; Dr. James A. Hoffman, Newark, N. J.; Longmans, Green & Co., New York; Valentine's Meat Juice Works, Richmond, Va.; Dr. J. P. Thomas, Elmo, Ky.; Dr. Charles Denison, Denver, Col.; Dr. J. McF. Gaston, Atlanta, Ga.; Woman's Medical College, New York; Dr. A. H. Kinnear, Henry, Ill.; Dr. R. L. Sutton, Pittsburg, Pa.; Dr. N. Senn, Milwaukee, Wis.; Med. Dept. University of Maryland, Baltimore, Md.; Dr. R. J. Dunglison, Philadelphia; Guaranty Investment Co., New York; Dr. R. M. Jordan, St. Louis, Mo.; Dr. B. M. J. Conlin, Alexandra, Dak.; The American and Continental Sanitas Co., New York; Dr. T. H. Woodward, Lincoln, Neb.; Lea Bros. & Co., Philadelphia; Dr. Frank DeVilbiss, Spring Garden, Mo.; Dr. Thos. Hay, Philadelphia; The Cleveland Medical Gazette, Cleveland, O.; The Microscope, Trenton, N. J.; Dr. A. I. Thomas, Chicago; Dr. George W. Davis, Kansas City, Mo.; Dr. Chas. P. Knapp, Wyoming, Pa.; Dr. Frank Trester Smith, Chattanooga, Tenn.; Dr. C. H. A. Kleinschmidt, Washington; Dr. J. D. Couch, Somerville, Mass.; Dr. Joseph Eastman, Indianapolis, Ind.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from November 16, 1889, to November 22, 1889.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Major Leonard Y. Loring, Surgeon, in S. O. 241, October 16, 1889, from this office, is still further extended one month on surgeon's certificate of disability. Par. 3, S. O. 268, A. G. O., Hdqrs. of the Army, November 16, 1889.

Capt. Edward B. Moseley, Asst. Surgeon, is relieved from duty at Whipple Bks., Ariz., to take effect upon the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Clark, Tex., for duty at that station, reporting by letter to the commanding General Dept. of Texas. Par. 4, S. O. 268, A. G. O., November 16, 1889.

Capt. Walter W. R. Fisher, Asst. Surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer, Ft. Assiniboine, Mont., for duty at that station, reporting by letter to the commanding General, Dept. of Dakota. Par. 4, S. O. 268, A. G. O., Hdqrs. of the Army, November 16, 1889.

Capt. Rudolph G. Ebert, Asst. Surgeon, leave of absence on surgeon's certificate of disability granted in S. O. 109, May 11, 1889, from this office, is extended six months on surgeon's certificate of disability. Par. 13, S. O. 270, A. G. O., Hdqrs. of the Army, November 19, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 23, 1889.

P. A. Surgeon W. H. Rush, ordered to U. S. S. "Saratoga."

Asst. Surgeon J. F. Uric, from coast survey Str. "Gedney" and to the U. S. S. "New Hampshire."

Asst. Surgeon P. H. Bryant, from the Norfolk Hospital and to the coast survey Str. "Gedney."

Asst. Surgeon Geo. T. Smith, from the Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, Norfolk, Va.

Asst. Surgeon E. P. Stern, after examination for promotion await orders at Boston, Mass.